Industrial Finishing

Reg. U. S. Pat. Off.

An Independent Publication Devoted to the Finishing of Industrial Products

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Equipment paid for itself in less than 1 week

PAASCHE Airfinishing Equipment makes records each day for hundreds of industrial plants—records for saving money—saving time—saving labor—improving finish.

In the plant where savings given above were made, new Paasche Airfinishing Equipment reduced the operators' time and allowed continuous production. Previous methods required 3 stops per piece for refilling paint cups. The new Paasche Equipment made these remarkable cost reductions by comparison with equipment that was thought to be up-to-date and efficient.

Write for new bulletins describing Paasche Fireproof Airfinishing Equipment.

Fastest operating Pressure Feed Tank (patented) Cover on and off in 15 seconds for 100 lbs. working pressure. Sizes up to 200 gal. capacity.

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LET FACTS PROVE SUPERIORITY

IF 9 Gray

From the Editor's Desk

THROUGHOUT the summer months more inquiries than usual have come to INDUSTRIAL FINISHING for information about materials, equipment, sources of supply and specific problems on finishing. It is apparent that during the lull in volume buying and production, manufacturers who use finishes have been busy planning, investigating and experimenting. More concerns have had time to take notice of the possibilities of many changes and improvements in materials, equipment and methods they use, and now they realize they must be prepared to take advantage of these new developments designed to improve the quality and enhance the appearance of their products, while at the same time effecting substantial manufacturing economies.

But changes and improvements in products haven't been confined solely to manufacturers of finishing materials and equipment. Numerous finish users, casting about for a more profitable line, have gotten into production on new articles that present problems which are entirely strange to them—which means that they must virtually start all over again in the selection or adaptation of materials and equipment, and in the development of methods that must prove to be both satisfactory and economical.

Presenting information on these new developments, every department of INDUSTRIAL FINISHING magazine will be particularly interesting and valuable—the full-page and fractional-page advertisements, the feature articles, short articles, questions and answers, new materials and equipment, and news items. Read every copy thoroughly and do not hesitate to write for further information.

W. K. Rohr

Managing Editor

I'LL SAY IT'S A LACQUER YOU CAN DEPEND ON

ALAKA

A GOOD many fingernails are worn down each month, trying to separate an ALAKA film from the material it has got its teeth in . . . no go! *It's tough!* ALAKA adheres. It is uniform - dependable - practical. It's popular.

Write for Booklet

All raw materials are analyzed by our own laboratory to check their uniform quality in accordance with our prescribed standards. Under scientifically controlled production it is not strange that laboratory tests of ALAKA, before it is packed in drums for shipment, should prove our point of guaranteed uniformity ..... that makes ALAKA dependable, always

LACQUER & CHEMICAL CORP.

214-222 40th ST. ~ BROOKLYN N.Y

CHICAG *makers of* **ALAKA** **PHILADELPHIA**

Filtered Forced Air Speeds Drying of Finishes

By
N. T. NEALY

The installation of a simple, forced air, heating system is so inexpensive in proportion to the results achieved as to make its consideration a matter of prime importance where any except quick-drying finishes are applied

"In connection with your editorial on quality in finishing, which appeared in the August issue (Page 5) of your publication, you may be interested in this article dealing with the use of forced air ventilation and air filtration in speeding up drying, and improving the quality of finishes.

"This article is based on the practical experience which engineers of this company have obtained in supplying air filters for use in connection with drying operations. We believe it holds information of value to the industry covered by your publication."—

AMERICAN AIR FILTER COMPANY, INC.

N. T. Nealy
Advertising Manager

THE PRACTICE of placing freshly painted products in still, non-ventilated air, to dry as best they may, is not in accordance with the most efficient production procedure. Regardless of the storage capacity available and facilities for letting nature take its course in this respect, the practice is not economical—if for no other reason than its inability to rise to production emergencies.

Different finishes require different drying periods, but any ordinary paint, varnish, lacquer or enamel will dry much quicker in warm air that is being constantly renewed. Charts No. 1 and No. 2 give a general idea of the average decrease in drying time when ventilated air and air of higher temperature is used.

In general, the charts show the advantage of high temperature and low velocity. High velocities do not seem to offer any worthwhile speeding up of the process —which is fortunate in the respect that it permits the installation of inexpensive, forced air, ventilating systems and makes possible the conversion of storage places into ideal drying rooms at a minimum of expense.

Of course, the curves shown in the chart will not apply exactly to any particular kind of paint; they merely hit an average and indicate the greatly increased evaporation of thinner vapors during the first half of the drying period. The remaining half of the period, while of course showing no such great difference between still and ventilated air, and low and high temperature, will nevertheless indicate a worthwhile decrease in time.

The charts apply as well to preliminary forced air drying of baked japans and enamels as to unbaked finishes. The advantages

of applying a short 50-minute, forced, hot air dry before placing in baking ovens, is marked—and of course the ventilation of baking ovens is not only a matter of saving in time, but a necessity in the elimination of the explosion hazard.

Filtered Air Essential

It is obvious that the use of forced air in the drying of freshly painted products would be impossible were it not that clean, dust-free air, secured by means of modern, air filtering devices, is available for this purpose. Air is simply passed through the required number of air filters and all dust and foreign particles are impinged upon the viscous coated surfaces of same, with the result that only clean air passes into the drying room.

One or more unit heaters, as manufactured by a dozen different manufacturers, a small blower fan, and one or more air filters are all that is required. The cost of power to operate such a fan is low; so also is the cost of a unit heater—and the expense involved in the operation of air filters amounts to only a few cents per week.

Manually cleaned unit filters are the best and most economical for this purpose. It is only necessary to clean and recharge them once a month or so. Where finishing is done on a very large scale, the automatic self-cleaning filter may better answer the purpose.

High Temperatures

In some factories, freshly finished products are hung up or left to dry in rooms where men are engaged in work, in which case it is undesirable to supply unduly heated air. But the advantages of ventilated air at ordinary temperatures, as indicated in Chart No. 2, are well worthwhile in speeding up the drying process.

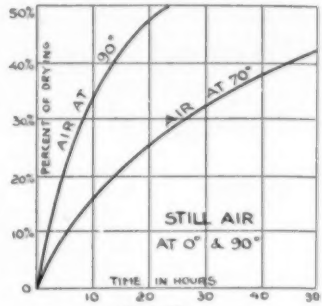


Chart No. 1

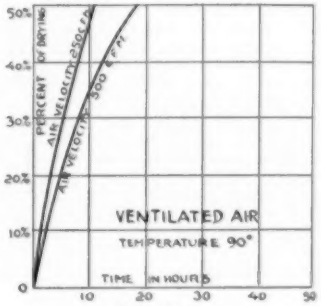


Chart No. 2

These charts show the decrease in drying time required when air of higher temperature (Chart No. 1) and ventilated air (Chart No. 2) are used.

Explosion Hazards

Japanning or enameling ovens constitute an exceedingly serious explosion hazard when evaporated thinner vapors are allowed to accumulate at the high temperatures maintained in these ovens. It is estimated that a mixture of approximately 1.5% by volume of thinner vapor in air will explode.

The simplest method of getting

around this difficulty—and the one most generally used—is to get rid of the explosive vapors by ventilating the ovens during the baking process.

Naturally such ventilating air, unless it is cleaned of all dust particles, constitutes a serious menace to the quality of the finished product. The United States Weather Bureau estimates that there are 115,000 particles of dirt to the cubic inch of ordinary city air. The circulation of 300 to 400-cu. ft. of air per minute through an average baking oven, under ordinary circumstances, is capable of depositing appreciable quantities of dust upon the sticky japan or enamel surfaces.

The use of screens in air intakes is an inefficient way of getting around the difficulty, as they are a source of trouble and clog up, thus building up a resistance which increases the danger of an insufficient air supply. Modern viscous type air filters require little attention and provide a steady stream of clean dust-free air at all times.

Most of the thinner vapor is given off during the first 10 or 15 minutes of baking. For this reason, it is advisable to let freshly painted products stand for a few moments before placing them in the oven, in order that as much enamel and thinner vapor may be removed as possible before they enter the oven.

Sufficient air must be supplied during the first few minutes of baking to prevent the forming of an explosive mixture. At this time, a great quantity of air is needed, although very little is necessary towards the end of the bake. Fifty or more changes per hour are often necessary at the beginning, yet 20 changes are more than enough at the end.

Liquid masking materials save time and produce fine line work where panels or mouldings form a part of the surface to be finished.

New Heating Equipment Representatives

Jas. P. Marsh & Co., (heating systems and units, industrial instruments, automatic air valves and gauges) Chicago, a division of the Commercial Instrument Corp., announces the appointment of M. A. Cooper as district sales representative with headquarters at New Orleans, La.; and E. L. Aikins of the Marsh Sales Co., as district representative for the states of Washington, Oregon, Montana, Idaho and British Columbia.

W. W. Burgess to Represent V. J. Dolan & Co., in South

V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago, Ill., announces the appointment of Mr. W. W. Burgess to represent them as District Manager in High Point and Statesville, N. C. Mr. Burgess is well known to the trade in the territory he will cover, namely North and South Carolina and Virginia, having been actively employed in similar lines for the past 20 years.

Valentine Appointments

Valentine & Co. 386 Fourth Ave., New York City announces the following appointments and changes in its personnel:

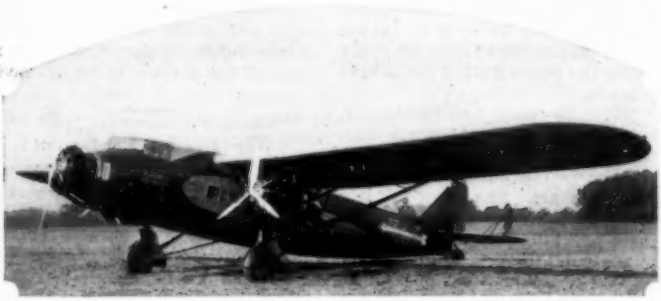
Mr. Frank P. Connolly has been appointed Director of Sales Promotion, and will also direct the sales promotional and advertising activities of Valentine's subsidiary companies.

Mr. M. F. Emrich has been appointed Director of Industrial Sales, and in that capacity will have direct charge of the development of the large industrial field for Valentine products.

Mr. Leonard Mould has been placed in complete charge of all Canadian interests.

Mr. R. D. Sullivan has been appointed Manager of the Chicago Branch, to succeed Mr. Kleckner.

Mr. L. J. Lamb has been appointed to succeed Mr. Connolly in charge of important automotive trade formerly under Mr. Connolly's direction, with headquarters in Detroit.



Aircraft Finishing—I

By
C. E. KIRKBRIDE

Project Engineer at Naval Aircraft Factory, Philadelphia, Pa., reveals interesting information about selecting, treating, cleaning and finishing the metal and fabric parts of modern aircraft

THE OLD ADAGE, "A stitch in time saves nine," is exceedingly appropriate with reference to the application of protective coatings to aircraft, particularly those parts constructed of aluminum alloy.

This particular metal, which has become so well known that it needs no introduction, is, because of its high strength and light weight characteristics, being used extensively in the construction of aircraft. In fact the quantities used for this purpose are increasing at an astonishing rate due to the rapid growth of the industry.

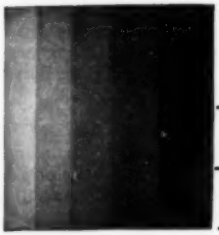
There is, however, one serious obstacle which must be surmounted before the use of aluminum alloy for aircraft purposes can be logically termed a success. The obstacle in question is corrosion.

The chemical composition of this material is of such a nature that it tends to promote both surface and inter-crystalline corrosion at an accelerated rate, particularly so when in direct contact with moisture, especially salt water, and many agencies are now at work endeavoring to formulate special coatings that will overcome the difficulty in question.

In order to substantiate the statement that such a special protective coating is essential, it is but necessary to quote the case of an aluminum alloy seaplane float constructed at a cost of $4,000 and scrapped after one year of service because of its badly corroded condition. This single case is not the exception to the rule but is fairly representative of general conditions.

Anodizing Aluminum Surfaces

A great stride was made in the right direction with the advent of



PYROXYLIN LACQUERS

WHEN you choose a lacquer today nothing should be taken for granted.

To develop in lacquer the highest degree of quality and uniformity requires the strictest adherence to scientific standards.

In our laboratories absolute control at all times over basic raw materials and chemical processes—continuous research—constant experimental testing and checking, have made Zapon Pyroxylin Lacquers superior for every use. This explains why it is decidedly more economical and satisfactory to insist on Zapon.

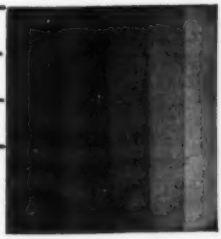
Upon the confidence of the buyer rests the reputation of Zapon steadily growing through nearly a half century to undisputed leadership.

Regardless of what your finishing problem may be, the complete facilities of our Service Laboratory are constantly at your disposal without cost. Here scientific knowledge, brings about the most practical and economical solution. "The Acknowledged Standard Since 1884."

THE ZAPON COMPANY

STAMFORD, CONN.

ZAPON



the anodic treatment. For those who may not be familiar with the anodic treatment, or "anodizing" as it is sometimes termed, it might be well to state here that it is an electrolytic process, successfully applied only to aluminum and aluminum alloys containing not over 5% of copper, in which the part to be treated is made the anode in an electrolyte consisting of a 3% water solution of chromic acid.

Briefly, under certain conditions of time, temperature and voltage, the surfaces to be treated acquire a film of aluminum oxide which is very resistant to corrosive attack by fresh or salt atmosphere, and to which varnishes, paints and other protective coatings of this nature will adhere much more firmly than to the natural surfaces of aluminum, duralumin or other aluminum base alloys.

While not essentially a finish in the sense that no coating is applied directly, this form of protection against corrosion of aluminum alloy has exceptional merit.

Test specimens so treated were placed in a salt spray tank in competition with untreated specimens and at the expiration of 60 days the anodically treated specimens showed no evidence of corrosion attack, whereas corrosion of the untreated specimens had progressed quite rapidly. In fact at the end of about two weeks it was plainly manifested in every case by a fairly uniform roughening of the surfaces and the presence of a product, which after drying, assumed the form of a fine white powder.

Anodizing in itself, however, does not afford sufficient protection, inasmuch as the slightest abrasive action tends to remove it. It is therefore imperative that in addition to the anodizing process the material be further protected with a properly designed paint finish.

"Alclad"

Quite recently a manufacturing organization of international repute, realizing the susceptibility of aluminum alloy to corrosion, attempted to correct this deficiency by superimposing a relatively thin layer of aluminum of high purity on both sides of sheet aluminum alloy. This material is now being marketed under the name of "Alclad."

Numerous tests have proved beyond a doubt that this combination is the nearest approach to what may be termed the ideal material for aircraft construction. But here again it is well to note that while this material has excellent anti-corrosive qualities, it can be improved considerably by the proper application of a good paint finish.

In order to determine the anti-corrosive qualities of "Alclad" when treated anodically, several specimens of this material, in the "as-received" condition, were placed in a salt sprayed tank along with other specimens which had been subjected to the anodic treatment, and it is of interest to note that at the end of 60 days exposure, the anodically treated "Alclad" showed no evidence of attack, whereas the untreated "Alclad" was not entirely immune. From this, therefore, it may be concluded that from an anti-corrosive viewpoint, best results can be obtained with the use of "Alclad" anodically treated and given a final finish of good paint.

The term "good paint" should not be passed over lightly. Paints

IMPERVIOUS PRODUCTS

For Finishes of Quality

PYROXYLIN LACQUERS
FINISHING VARNISHES
INSULATING VARNISHES
.. BAKING ENAMELS ..
PROTECTIVE COATINGS

Send us your inquiries and we will gladly furnish you with quotations.

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IMPERVIOUS VARNISH COMPANY

General Office — 436 Seventh Ave., Pittsburgh, Pa.

Factory — Rochester, Pa.

that seem to be giving perfect satisfaction for other purposes usually turn out to be dismal failures when applied to aircraft. The U. S. Government and various civilian concerns have been struggling with this important subject for several years and as a result have evolved methods of application and various finishes which seem to be best suited for the purpose intended.

There are today several manufacturers specializing in the production of paint for strictly aircraft use, and it is strongly recommended that the prospective aircraft finisher procure his material from such a source.

Before proceeding with the general methods and materials best suited for finishing the complete airplane, I believe it will be of interest to continue with the discussion of that portion constructed of aluminum alloy, inasmuch as this material has been the greatest source of difficulty. Precautions against corrosion of this material should be instituted immediately after the raw material is received from the manufacturer and placed in the stock room. The surfaces should be well oiled and care should be exercised in handling in order to prevent surface scratches.

Precautions Against Corrosion

After the various detail parts have been constructed, they should be subjected to the anodic treatment. In this connection it has been determined that the method of anodizing separately, individual duralumin parts, which later become parts of a riveted assembly, has disadvantages such as high cost of treatment, the possibility of damage to the anodic film during fabrication and generally the lack of a film on certain areas, such as on rivet hole surfaces and sheared edges.

The practice of anodizing sheets and using unanodized rivets is unsatisfactory because corrosion of the rivet is very apt to occur and such corrosion is often accompanied by accelerated corrosion of the plate. If the rivets are anodized separately, the treatment must be given before heat treating and driving, so that the film cannot be as effective as one on parts suffering no deformation.

In addition to these disadvantages there also exists the probability that many of the rivets will not be properly seated, so that moisture getting under the rivet head or point causes rapid corrosion of the rivet and possibly of the rivet hole, which usually has no anodized protecting film because most of such holes are drilled during assembly. Anodic treatment of assemblies would eliminate the difficulties mentioned. It should be borne in mind, however, that any material which may have been incorporated into the assembly for the purpose of making gas-tight or water-tight seams should be resistant to the anodic action of the chromic acid treatment.

(To be continued next month)

If the finishing department is small, give it all the more attention.

Meetings Scheduled Next Month

The National Paint, Oil and Varnish Assn., will hold its annual convention in Toronto, Canada, at Hotel Royal during the week of Oct. 13. General Manager, Geo. V. Horgan, 18 E. 41st St., New York City.

The Spray Painting and Finishing Equipment Mfrs. Assn., is scheduled to hold its next meeting at the same hotel (as mentioned above) on Oct. 14 and 15. Secretary, Wm. J. Pitt 300 Phillips Ave., Toledo, Ohio.

A Complete High Quality Finish in One Day

STAIN, Filler, Sealer and Lacquer may all be applied in one day. In the Day Finish, each of these materials has been developed to produce faster and finer results. Perma-Stain dries to recoat in less than an hour. It won't fade, bleed or raise the grain. Day's 3-Hour Filler rubs easily and won't shrink or fade. Day's Sanding Sealer produces a heavier film than others. No. 6181 Gloss Body Lacquer gives a full, durable film in two coats over sealer, and rubs beautifully. No. 6161 Flat Lacquer won't turn glossy and is exceptionally transparent. Order enough of each to finish a complete suite. If not satisfactory, return at our expense. Investigate now to save time and money.

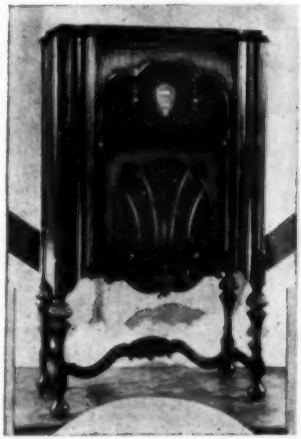
James B. Day & Co., Chicago

THE DAY FINISH
Stain, Filler, Sealer and Lacquer—All in One Day

Finishing Radio Cabinets Without Force Drying

By
O. R. OWENS

Production Superintendent of Gulbransen Co., Chicago, Ill., explains in detail how a quality finish is applied on radio cabinets quickly and economically through the use of modern materials, equipment and methods



QUALITY, economy and quantity are three vital factors of production. Obtain the first two in correct proportion, and quantity will take care of itself. Quality, commensurate with the product and the use to which the product will be put, is forced upon the manufacturer, therefore of the three factors, economy is the keystone. I am impressed with this fact more and more each day in the face of present conditions and price tendencies; and it is toward this end that we are working in every department of our plant.

Take for example wood finishing. Without going too far back into ancient history, there have been some wonderful improvements in equipment, methods and materials. Of the two purchasable improvements, the development of modern materials has been the most outstanding in point of economy for results obtained.

Water-oil and pigment stains, combined with pyroxylin solvents and fast-drying fillers, are the most recent and perhaps the most notable developments in finishing materials. In order to illustrate how some of these materials are effecting economy through cutting down the finishing time without sacrificing quality of finish, I shall briefly outline our finishing schedule on radio cabinets.

The first operation in the finishing room is to apply by hand a thin coat of clear white shellac on all carvings and on the surface areas of all turnings where end grain of the wood is exposed. This is done, of course, to prevent stain from penetrating these parts and causing them to be proportionately darker than the rest of the cabinet. Time allowance for this operation is ¾ minute per cabinet.

GENTLEMEN:

HERE is a Solvent
A Non-Grain-Raising-Solvent
for
Water Soluble Aniline Stain Powders

This new, remarkable Solvent is the very thing that furniture and wookworking plants have been looking for, especially where the matching of special shades and colors is constantly going on.

Actually, this Solvent does dissolve all Water Soluble Aniline Stain Powders every bit as readily as water;

but

does not raise the grain of the softest or most porous woods.

does not bleed under shellac or lacquer.

does not wipe light under wood filler.

does not need to be heated.

and

it eliminates entirely wash-coating and sanding.

it makes a stain as fast to light as regular Water Stain.

it dries in thirty minutes.

This practical new Solvent is,

"SPRUANCE QUALITY"

#5856 Aniline Solvent

Patent applied for.
Further information furnished on request

THE GILBERT SPRUANCE CO.

Richmond and Tioga Streets

Philadelphia

The cabinet then proceeds to one of the spray booths where a dark oil stain is applied to the inside of the cabinet only. Following this, and in the same booth, the outside of the cabinet is sprayed with a walnut "stain-fill" or "uniforming stain" made up of pigment stain combined with lacquer solvents.

Using 18 spray booths and this process with modern, efficient and properly adapted materials, we have a capacity of 1800 cabinets per day.

We operate staining booths with an operator and a helper. As the operator completes staining the outside of the cabinet, the helper replaces the stained cabinet with one in the white, and *immediately* wipes the stain and advances the cabinet to the filler bench.

This stain penetrates deeply and rapidly, is fast to light, will not fade under any natural conditions, and will not bleed. But its most prominent qualities, from an economical production basis, are that (1) it gives to the various species of wood contained in one cabinet—such as sap and red gum and walnut—a uniform brown color as a finishing basis or foundation, (2) it does not raise the grain, and (3) it dries immediately, permitting the cabinet to go to the fillers without further labor or time loss for drying. Time allowance for the complete staining and wiping operations is 1¾ minutes per cabinet for operator and helper.

Under many conditions the "stain-fill" just described would be sufficient, rendering filling unnecessary, but the high quality of finish required on these cabinets demands a filling operation, which follows immediately. Filler is applied with a hand brush, and all flat surfaces are wiped with sea moss and then ragged. Mouldings, crevices and corners are cleaned with scrubbers and picks to insure a clean job as well as a thoroughly filled one. Time allowance for filling and cleaning is 12 minutes per cabinet. The drying time is four hours or more—according to conditions.

Then the cabinet goes to the hand toner, who applies a distemper color to all moulded edges, overlays and recesses in mouldings. This is another operation like staining that I class as a finishing basis or foundation coat. Time allowance for this hand operation is four minutes per cabinet.

Next a spray coat of lacquer sealer is applied to the entire outer surface of the cabinet. Time allowance for this operation is 1½ minutes per cabinet.

After drying 35 to 40 minutes, the sealer coat is sanded using No. 4/0 sandpaper. All moulded edges and turnings are steel-wooled, then dusted and cleaned. Time allowance of 8 minutes for sanding and cleaning.

Next a dark lacquer shading stain is sprayed on to equalize the color of the entire cabinet and to highlight or emphasize the beauty of the attractively matched plywood and the carvings. We allow 15 minutes per cabinet for this operation, which requires the careful work of the highest skilled men to produce excellent results.

Following this, a heavy coat of semi-flat lacquer is sprayed on the entire cabinet. The time allowance is 1½ minutes per cabinet. After drying, cabinets are inspected and lightly steel-wooled. Then follows another inspection, and

BLAH - BLAH - BLAH

Trick phrases and high-sounding adjectives never made a lacquer thinner.

Thus we challenge a denial of this plain fact statement:

"A lacquer thinner is no better than its ingredients; no lower in cost than the intelligence of its formulator."

It's our eight-hour daily job to formulate the "just right" thinner for the lacquer at hand and (of course) save money for the user. After all, can you afford *not* to be interested ?

Pardon us for a colloquial moment when we say "give the boys a chance."

P. S. A copy of our latest brochure, "11 Lacquer Thinner Problems" — interesting, enlightening, profitable reading — is available on request.

PIERCE & STEVENS,
Incorporated

Industrial Lacquers and Lacquer Thinners

721 Ohio Street **Buffalo, N. Y.**

any necessary corrective labor is performed before the cabinets go to the chassis division for chassis installation. This operation completed, cabinets are given a final inspection and polished with a paraffin-base oil before entering the packing and crating line.

There is just one more point I wish to call attention to. You may have noticed I did not mention inspection until after the final coat of semi-flat lacquer had been applied. Up to this point the men who perform the major operations are the inspectors. With our wage-incentive bonus plan each operator is not only arbiter of the results of his own performance, but enters in with each succeeding operator to produce a quality of workmanship that will pass the rigid final inspection. Rejects are a rarity and corrective labor is held to a minimum.

Finishing Fancy Domestic and Imported Veneers

By
BEN J. STUDER

Foreman finisher calls attention to some of the numerous fancy veneers now used for striking decorative effects in modern furniture and interior woodwork, and submits several recommendations about how to finish them effectively

IN THE WAY of colors and finishes there has been a great change in wood finishing during the last five or six years. Formerly, we had the different colors of finish, such as red mahogany, brown mahogany, fumed oak, Jacobean oak, weathered oak, bog oak, etc. But the finishers of today have several different fancy veneers to contend with, such as fauxsatine, vermilion, zebra wood, rosewood, lacewood, bubinga, maple, redwood burl, tanga burl, padouk, koa and many others.

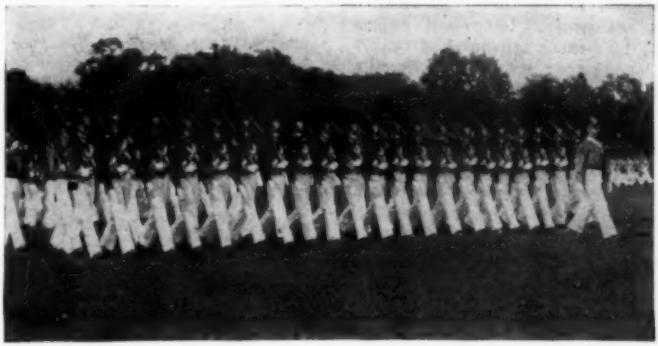
Rosewood; Vermilion

Rosewood should be finished in a deep dark red, but not so dark as to hide the beauty of the wood. Vermilion should be finished in a little brighter red than the rosewood, and shaded very little if any. It is preferable to finish zebra wood in its natural color, using very light filler; a light brown will bring out the beauty of the grain.

Before filling rosewood, size the surface with a wash coat of shellac; rosewood contains a lot of oil and unless it is properly sealed, the final finishing job will show shallow pores, and you will wonder why. Also, shellac all vermilion before filling, so you can get a good job of filling and save the lacquer coats.

Zebra Wood; Satinwood

Zebra wood is a beautiful wood if finished properly. Satinwood



UNIFORMITY *made perfect*

. . . *step by step*

ACROSS the drill-ground they sweep . . . entire companies stepping as one man, in perfect rhythm . . . masters of uniformity. Years of ceaseless drilling were necessary before this perfect uniformity was obtained.

So it is with the perfect uniformity of du Pont finishes. Years are spent by du Pont chemists in ceaseless scientific research, skillful blending, testing and experimenting with raw materials. Not satisfied with this, du Pont is constantly checking and re-checking against that standard to keep the perfect uniformity first obtained.

Only a company like du Pont has the experience and the organized skill to conduct the painstaking and time-consuming research necessary to create this perfect uniformity of finish. That is the reason you may specify Duco, Dulux Varnishes, du Pont Wood Lacquers, 1985 Sealer, and other du Pont finishes, with the assurance of getting a finish that is uniformly perfect.

E. I. DU PONT DE NEMOURS & CO., Inc.
Industrial Finishes Division, Parlin, N. J., Chicago, Ill., San Francisco, Cal., Everett, Mass., Canadian Industries, Limited, Paint and Varnish Division, Toronto, Ontario, Canada

8
QUICK FACTS
that explain the leadership of du Pont finishes

1. Vast research and development organization.
2. Rigid laboratory control of all products.
3. Unequalled manufacturing facilities.
4. Technical chemical service.
5. Technical engineering service.
6. Sales and service organization.
7. Warehouse and delivery service.
8. Color advisory service.

FINISHED WITH DUCO

The Duco Oval on tag or seal helps buyers identify a Duco finish on many leading lines of furniture.

DUCO . . . made only by du Pont

should be finished the same as zebra wood. Lacewood appears at its best when finished natural, the finisher using a light filler, the same as for zebra wood; a dark filler gives it a muddy appearance.

Zebra wood is different from satinwood and lacewood; it has large pores, therefore in mixing the filler, I suggest using say, 14-lbs. of silex filler to one gallon of gasoline or naphtha, or quantities made up in this same proportion. This filler will also do for rosewood and vermilion, although for vermilion I believe 10-lbs. or 11-lbs. to the gallon would be sufficient.

Filling and Double Filling

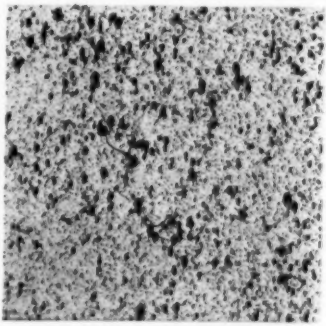
This filler is excellent if it is brushed on properly. The art of correct filling is not all in the wiping off; the material must be well brushed in, or the finisher will have open pores and pin holes to contend with afterwards. Many finishers resort to "double filling," but I don't see why this is necessary; if a finisher gets the pores properly filled in the first place, he can't get any more in during a second filling, therefore to my way of thinking he is not only wasting time and material but slowing up production.

All burls show up best when finished in their natural colors; do not use a filler that's too dark.

Novel Spatter Finishes

Some of the unique effects we secured recently included color spattered finishes, such as red spatter on a black field and green spatter on a black field. These were produced as follows:

Spray one coat of rubber finish black lacquer, and follow immediately with an application of industrial colored lacquer to which is added 25% of spatter mixing. This prepared colored lacquer is mixed and reduced 50/50 with thinner, and then sprayed on with a regular spray gun, holding the nozzle about 2-ft. from the surface to be sprayed.



A further refinement may be obtained by following with two coats of flexible polishing lacquer, rubbing and polishing the following day. This finish is adapted for use on wood, metal and paper.

The size of the spatter pattern can be controlled, as it depends upon the amount of spatter mixing added to the vehicle. A greater percent of spatter will produce a larger pattern, and vice versa.

The design of the pattern can also be controlled by manipulation of the spray gun. The distance the gun is held from the surface to be coated will affect the size of the spatter, and the angle at which the material is "shot" will affect the finished design.

We have also experimented with bronze powders and have secured a variety of pleasing colors and effects. More than one color or bronze may be used to excellent advantage—if the job will warrant the additional applications.—A. B.

What's in a name?

NOTHING -- when the name is taken by itself. But when it has been identified with an honest product for over twenty-three years, as ours has been, it becomes a guarantee and a pledge of quality and service.

Our customers know that the name "ROCKFORD VARNISH COMPANY" on a finishing material container means contents of the highest grade. That's why they remain our customers. Their satisfaction can be yours, too, if you'll give us a chance to prove the merit of our product. Will you do it?

The

ROCKFORD VARNISH

Company

ROCKFORD, ILL.

Colors for Lacquers

By
J. C. ALSEE

Something interesting and informative about color materials suitable for use in lacquers—what qualities and merits to look for in the colors under consideration and why certain factors rate so importantly

THERE ARE FOUR classes of color materials, all produced by methods, the fundamentals of which are so vastly different that they really constitute a separate industry in themselves.

The behavior of color in an oleoresinous type vehicle is different than in a nitrocellulose film. Products made of nitrocellulose minus colors are rapidly disintegrated by the rays of sunlight. Color or pigment matter, is therefore incorporated with the object in mind of retarding the filtration of the sun's rays. Equally as important, color is added to produce the desired color effect.

We can recall the days of color varnish, when it was necessary to incorporate that last coating of clear varnish, and have noted the alligator effect so often produced by the sun's rays after exposure of the finish. The lacquer chemist has been confronted with the same problem in research, insofar as a clear finishing coat is concerned. Of course, he has, with the aid of newer developments in lacquer raw materials, advanced to the state where the breaking point of clear finishing coat (so determined in an ultra-violet ray machine) is around 2,000 light hours, but there still remains work to do to attain further perfection of the product. Really this again brings us to consider the possibility of incorporating color in the metal itself and then coating it with clear finishing material. This plan may be established at some future date.

The ideal color for use in lacquer should be chemically inert, maintaining permanency, low oil absorption, great tintorial strength and good hiding properties. It is unfortunate that all of these desirable qualities cannot be controlled at all times in a given color shade; certain characteristics must be sacrificed in order to secure the more important attributes, which may be termed in some respects as brilliancy, bleeding qualities and opacity as some of the essential features.

The artificial reproduction of colors has been the aim of color users from early times. History records in early Egyptian and Chinese documents references to colors presumably made from earthen substances. It was not until the early 18th century that Prussian blue was made. In the past 25 years greater strides have been reached in color manufacture than in the 1000 years previous.

Permanency of color is a factor that is quite essential. A certain type of color may give entire satisfaction when used alone, while, when it is incorporated with other colors to reach a definite shade it may or may not be as permanent.

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Where Experience Counts!

Whether it's just a few friendly rounds of boxing for experience or sport, or a finish fight between some hardened professionals, the fistic game is certainly one in which experience counts.

In the less belligerent but just as competitive game of industrial finishing, experience is just as important—just as vital—as in the leather-pushers' province.

The principals of all the Lilly departments—laboratory, manufacturing, service and sales—are veterans in the industrial finishing field. Without qualification, we can say that there is no other organization in the country with such a background of experience in this very highly specialized field. This experience has been a tremendous factor in establishing the Lilly name and maintaining the Lilly reputation in the industrial field.

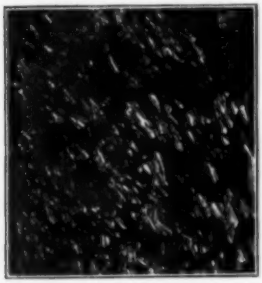
In the interest of quality service to our trade, our laboratory staff develops a special formula for every finishing problem presented. When that formula is approved, you can be sure that it is the right finish for the job—that it will meet most perfectly the particular requirements involved. The accepted formula is made a matter of absolute record and an approved sample is kept on file.

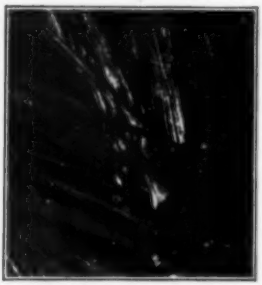
With such concentrated experience behind it, with rigid standards of quality in materials used, and with absolute precision to definite and approved specifications in manufacturing, a Lilly quality formula, developed to meet your special needs, is bound to solve your varnish, lacquer or enamel problems. We'll be glad to convince you any time. Write us about your present or future requirements. Lilly Varnish Company, 666 South California Street, Indianapolis, Indiana.

Lilly customers are won and held by Lilly quality—established in the laboratory and rigidly maintained in manufacturing. Lilly products and Lilly performance are absolutely dependable.

Lacquer-Enamel

Finish, You'll Finish Right





The above are specimens of three types of ZELACTITE, which is furnished in various sizes and effects.

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Here are the main facts regarding Zelactite: No baking. Absolutely one-coat finish. Rapid air-drying. For metals, woods, compositions, glass, etc. Ready-for-use, spray or dip grades. Size of crystalline effects variable, according to your requirements. Made in four types—1, clear, for use as such; 2, clear for use with metallic powders; 3, translucent, containing colors; 4, opaque, containing colored pigments. The colored grades are furnished in any color or shade desired.

Zelactite typifies the Zeller tradition for adhesiveness, flexibility, durability, etc. The many advantages and economies of Zelactite become apparent to any experienced finisher the first time it is used. Put Zelactite to your own tests. Send for trial order, specifying type, color and size of crystals.

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ZELACTITE

The question of oil absorption is important, especially when the grinding medium is considered. Colors of minimum amount of oil absorption are the type desirable for use in lacquers. In consideration of the medium of grinding colors to the proper fineness, there are the two mediums of stone mills and pebble mills. For lacquer use, colors ground in pebble mills will probably produce the finer grind, and these colors are more desirable from the standpoint of minimum additions of oil to reach same.

When a dry color is added to a pebble mill, excessive amounts of oil do not have to be present. This binding quality is replaced by either solvent or gum solutions. However, colors ground in pebble mills may require a longer time for grinding, but they do not need constant supervision. Likewise, it is essential that a large production be ground at an operation, from the standpoint of economy. It has been found that, when and if excessive amounts of oil were incorporated into a pebble mill grind for a portion of the grinding vehicle, the pigment absorbs the oil and captivates particles of unground pigment which have remained in this state as long as 72 hours grinding time.

The paint mill grinding medium must necessarily require a greater portion of oil to produce the fineness of grind, and it sometimes requires two or three separate grinds, all in accordance with the degree with which the mill has been dressed. Again there is exposure of the pigment which has been ground to consider, as well as the non-thoroughly mixed feature before its entry into the grinding mill.

While both types of grinding mediums prove satisfactory when incorporated into a clear lacquer vehicle, there is always the feature of the proper amounts of plasticizers—this, in view of the use to which the product is to be put when finished. Madder lakes, para toners, Prussian blues and lithol toners have greater oil absorption than the chrome yellows or greens; this always presents a problem, insofar as reaching the happy medium of oils to the proper grind.

The strongest of colors should only be used in lacquers, as colors that show great strength minimize the amount of pigment to reach the proper opacity of color. Some termed C. P. (commercially pure) colors are not the strongest colors obtainable. The strength test of toning with white should be the determining factor. A color rating table should necessarily include: texture, overtone, undertone, fading, strength, oil absorption and bleeding.

New Crystallizing Lacquer

John L. Armitage & Co., Newark, N.J., announces that: "A crystallizing lacquer has been developed by this company that may be dipped or sprayed on glass surfaces direct, without first applying a primary or bond coating. Test panels (of glass) thus coated over a year ago, show perfect adhesion and durability."

New Lacquer Protects Ignition Wires

Chemists at the laboratories of the E. I. DuPont de Nemours & Co., Inc., Wilmington, Del., working in cooperation with the technical staff of the Packard Electric Co., have developed a lacquer which, it is claimed, when applied to ignition cables of automobiles increases the general efficiency of the car 10% and more. This especially compounded lacquer is used for finishing the cotton braid surrounding the rubber covering of ignition cables. It is flexible at temperatures as low as zero and as high as 275° F.

What to Use and
How to Make Comparative

Fading and Material Tests On Colors and Finishes

By
W. J. MISKELLA

"I wonder how many finishers there are who really feel qualified to judge the shade or tint of any given color! How many are there who feel competent they can look and feel of a certain set of samples and conclude which is the superior?"

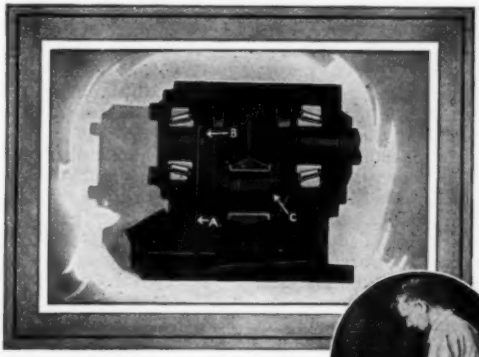
IN THE PAST the methods of choosing colors and selecting coating materials has been rather haphazard, but within the last few years there has come into use a number of scientific instruments, machines and methods which are tending to reduce these haphazard ways of doing things to a scientific basis.

The spirit of the present age is to learn all we can about things in advance. And with finishing materials, the most popular method of accomplishing this is by taking advantage of *accelerated fading tests*. In the case of textiles and painted surfaces that do not mar or wear mechanically it is exceedingly difficult to develop such tests. However, since it was learned that the old carbon-arc electric light was the nearest approach to sunlight that could be produced artificially, the task of setting up a machine for making comparative tests in a laboratory was undertaken—and this has proved to be a success.

Fastness when exposed to light, is one of the characteristics that must be carefully studied, and this is done with a very ingenious mechanical device in which the violet-carbon arc is an important part. This arc is surrounded by a thermo glass globe, since the combination of these two creates a condition for testing that is even better than actual sunlight, because they make up a positive standard, dependable and accurate —one that is not disturbed by irregular variables such as wind, rain, clouds, changes in temperature and so on. In this device, or machine, is provided a means to compare a set of samples under test with samples of other material, the characteristics of which are known.

Using the Fadometer

The fadometer, as this device is often called, aids in many ways such as improving the quality of products, preventing disappointment after the colored materials are put into use, and anticipating color discords that may come about as a result of the fading out of one of the colors in a three-or-more color combination. Through its use manufacturers of certain materials are able to do something that was never possible before—check the color characteristics of the materials while they are in the process of manufacture, instead of having to wait days and even



Security against excess lubricating oil

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A Compressor's lubricating system properly designed will not throw oil in excess amount all over the compressor interior but delivers it directly and in controlled volumn to each friction point.

In the Curtis Centro-Ring System, a ring (A) lifts oil to undercut groove (B) in crankshaft. Centrifugal force carries it through ducts in chamber (C) in crankshaft. Then a centrifugal force redistributes it to ribs in the crankshaft which lead the oil to each friction point.

Also there is the Curtis Suction Valve Type Unloader which avoids oil pumping due to vacuum. It operates on the suction valve. When machine is unloaded, valves do not operate as with a suction port unloader.

Isn't the compressor which offers that kind of protection the logical choice for paint spray work?

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weeks after their manufacture is complete to learn the result of actual exposure-to-weather tests. This machine will even give rough indications of the absolute failure of certain bad samples within a few hours.

Some materials require longer exposure than others, but it makes no difference what time period is required—the machine may be started and its operation carried on either continuously or interruptedly for a day, a week or a month as is desired, depending upon the actual known conditions existing in and about the material under test. In some cases the matter of humidity and change of air currents on the samples must be considered also.

Ultra-violet radiation enclosed in an expensive quartz-glass tube will fade certain dyes very quickly, thus giving rapid acceleration test. It has its uses in the laboratory under proper direction, so it is also important to have an ultra-violet light available in case it is needed.

The ghastly appearance that various colors take on under exposure to ultra-violet radiation has caused many to wonder about its color and characteristics. As a matter of fact the apparent color of each of several colors under the mercury arc light, is given in the table below:

Color	Apparent Color
Blue	Violet
Blue-Green	Dark Green
Blue-Violet	Dark Violet
Green	Light Green
Orange	Darker Yellow
Red	Black
Red-Orange	Darker Red
Red-Violet	Dark Violet
Violet	Dark Violet
Yellow	Yellow
Yellow-Green	Light Yellow-Green
Yellow-Orange	Dark Yellow

It will be noticed that there is a complete absence of red. The light itself is considered to be of a yellow-green color, although when lighted the tubular glass has a bluish appearance. It is interesting to note that the two colors of reds, red-orange and red-violet of the list appear to be the same color—dark violet.

Weathering a Color or Finish

Weathering of a color, or of any material for that matter, may be defined as a very severe fading test where the actual durability of the material itself is involved, as well as any change that may take place in the color itself. A machine (as illustrated in this article) for testing colors under these conditions requires close attention to a number of details not considered in the machine for testing the fading of colors. Some of these details are:

For making accelerated weathering and fading tests

1—A wind attachment.
2—A rain attachment.
3—A humidity attachment.
4—Means for combining the above at will.

RIBBON KIMPAK TACKED ON LOOSE 1"x1" WOOD BRACE PLACED IN DIAGONAL POSITION ON TOP OF CABINET
RIBBON KIMPAK TACKED ON REAR POST OF CABINET

Sparton Equasonne. Note large area of protection afforded by the cushions of Ribbon KIMPAK (Photo courtesy Wiswell Radio Co., Chicago, Distributors for Sparks-Withington Corp., Jackson, Mich.)

Radio Industry finds new way cuts cost

KEEPING pace with the amazing progress of America's fast-growing "baby" industry is no small task. But for the packing box designer, it is a necessity.

Complying with the demand for assuring greater speed, lower cost and utmost protection—this is the new shook design (employing the "open collar" method) for radio cabinets, developed in the wood box laboratory of Chicago Mill and Lumber Co.

YOURS FOR BETTER PACKING KIMPAK

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Ribbon KIMPAK, shown above, comes in handy rolls, 3 inches or more wide. Backed with chipboard or jute liner, it provides extreme softness for contact with finishes, plus strength to resist rough handling and pressure. Fill in and mail the coupon for free samples and quotations.

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5—Means for producing lower than room temperature.
6—Means for uniformly revolving the test samples.

In such a machine it must be possible to duplicate conditions as they exist in any part of the world. Should a manufacturer in the United States make something for a customer in Australia, he wants to be assured that there will be no objection to the fading or the durability of the color or of the material after it is placed in service in Australia.

With a machine of this kind one is able to predetermine the weather-resisting qualities of lacquers, paints, color, and other materials, even to roofing materials, rubber and metals, or for any material that is intended for outdoor use.

The samples are placed on a rotating device which carries them through well-regulated periods of sunshine, rain, coolness, darkness, once every 12 or 24 hours, depending upon the plans for the material under test. The test may be continued for an hour, a day, a month or for a year, either day by day, or day only, or day and night; it all depends upon the period best suited to give the desired final result.

Photographs of the test plates disclose valuable information, especially if they are enlarged. Since some of the weathering tests indicate what will happen to certain finishing materials after a number of years' exposure, it is possible to anticipate that there might be some valuable information gained from a study of what happens to these long wearing materials at regular intervals during their useful life.

Modern microscopy and photography combined may be used to very good advantage in this instance not only as records of the history of a test, but as a permanent record to take the place of unstable test plates that are themselves so susceptible to chemical and climatic changes.

Lacquers have become very popular and their use is running into investments of considerable proportion. Already lacquers have been specified in the finishing of entire buildings. Their general characteristics warrant their use, provided their extra cost can be reconciled. However, it is exceedingly important that the correct lacquer be chosen and that tests on it be made from time to time as the job is being finished, so that there will be no possibility of a mistake in its use. Only those having a colored pigment may be used outside, but clear lacquers may and will be used very extensively in the future for interior finishing.

I wonder how many finishers know why clear lacquers cannot be used for exterior work? And how many know that a lacquer film will harden in 24 hours, while it may take a varnish film several weeks? This is a day and age of research and the results of research must be everyday facts for the everyday finisher. Research must be the common thought of the paint manufacturer who must communicate the results in a plain understandable manner to the finishing foreman.

Research has found that lacquer standing in cans on the dealers' shelves often deteriorates in quality and, unless the pigment is ground very carefully, it is apt to settle out. Low density and low viscosity are, on the whole, the best way of meeting popular needs at present. In the study of lacquers, as to durability, the tensile strength measurement is something to take into consideration.

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We know, and thousands of manufacturers know, that Lingerwett by all odds is the most efficient remover that money can buy. No other remover is anything like it for the speed with which it removes paint, varnish, enamel, lacquer or shellac from any wood or metal surface.

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LINGERWETT REMOVER

Finishing English Harewood

By
T. R. NALL

Foreman finisher in showcase and store fixture factory describes some characteristics of English Harewood and explains in detail how to finish it to produce that beautiful attractive natural effect —plus permanence

THE ENGLISH Harewood, also called harewood and white harewood, is the product of the British Isles and western Europe. In England this tree is known under the common name of "sycamore" and the wood entering the United States market is sometimes sold as "English Sycamore."

Harewood possesses to high degree those qualities which recommend a wood for veneer in the "fancy wood" trade. Foremost among these is its affinity for stains and dyes. In the form of veneer, the wood presents a smooth surface free of checks. The wood sands smoothly, and is capable of high polish. Harewood is comparable in hardness to our domestic hard maple.

The grain is uniform and the texture fine and even. The pores are too small to be visible with the naked eye, and the vessel-lines along the grain are not in evidence, resulting in a clean and bright veneer. Owing to their number and high luster, the wood rays are conspicuous on the radial surface, rendering the wood unusually lustrous on the quarter. The ray tissue and the pores are quite free of coloring matter.

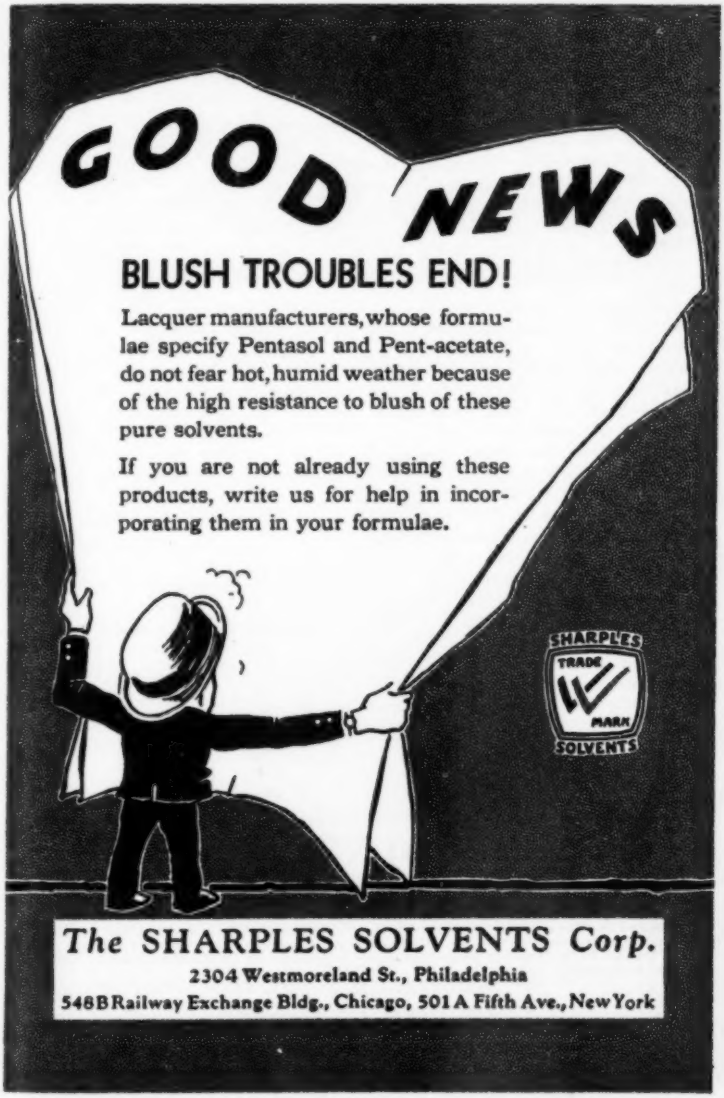
The color of harewood varies from white or pearl color to reddish white, the former colors usually being preferable. The figure for the most part varies from a close, uniform, fiddle-back design to a more or less wide finger-roll marking crossing the entire veneer.*

Since harewood is usually a pearl color in the white, it is desirable to select a clear transparent finishing material to retain this attractive pearl color, because the public prefers this wood in its natural color. I suggest using as few coats as possible, as the more coats applied to this veneer the more likely the pearl color is to take on a yellowish cast.

If thin harewood veneer is water stained, the glue is likely to come through and cause a blemish in the veneer. If a piece of the veneer goes bad, it is generally necessary to tear out the entire piece and replace it with new veneer, as it is almost impossible to treat or stain the blemish to match the remainder of the panel.

Harewood cabinet work should be free from dust before it enters the finishing department. If any scratches are in evidence they should be carefully sanded out. The cores (exposed edges) and solid woods of the cabinet work must be properly matched up with the harewood veneers. This core is usually made of birch or maple. Maple core is preferable because it can be more readily stained to match the natural harewood, whereas birch (unless specially

* Information in this and preceding paragraphs from "Nature's Treasure Chest" (No. 4) published by Penrod, Jurden & Clark Co. (domestic and foreign veneers) Cincinnati, Ohio.


GOOD NEWS
BLUSH TROUBLES END!
Lacquer manufacturers, whose formulae specify Pentasol and Pent-acetate, do not fear hot, humid weather because of the high resistance to blush of these pure solvents.
If you are not already using these products, write us for help in incorporating them in your formulae.
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548 B Railway Exchange Bldg., Chicago, 501 A Fifth Ave., New York

selected) runs from red to white, making the color vary when stained.

We stain with a silver gray water stain* mixed in hot water and diluted as needed to make exactly the right tone of color. After the stained surface is dry, we spray one coat of clear lacquer primer reduced (one quart of lacquer reducer to one gallon of lacquer primer) on both the core and the veneer, using about 60-lbs. air pressure and holding the spray gun 12 or 14-in. from the work. We apply a good wet coat, and then let it dry for about five hours, and sand with No. 5/0 sandpaper. We putty up nail holes with gray putty mixed with white lead and drop black, using only enough drop black to produce the same color as the surface being finished.

Then we apply a second coat of lacquer primer, reduced the same as the first coat, using the same amount of air pressure and holding the gun the same distance from the work, and giving the surface another "good wet coat." Let dry about eight hours, sand carefully with No. 5/0 sandpaper and follow with steel wool. Use the steel wool until the surface feels as if it were oiled or water rubbed.

By using these methods one does not discolor or lose that beautiful pearl effect characteristic of the genuine hare-wood veneer.

Be sure the surface is free from dust and then wax, using a paste wax as free from color as possible. Apply wax evenly with a rag just as it comes from the can; then rub briskly with the grain, using a soft rag, and you will have a polish and a rubbed effect that cannot be surpassed—and a finish of real durability. After a year or so, this surface wax finish can be renewed by just rewaxing.

*Name on request.

Fulghum & Co., Moves

Fulghum & Co. (paints, varnishes, etc.) is now located at its new address, 2309 E. 15th St., Los Angeles, Calif. Telephone, TRinity 4251.

Nichols' Pacific Coast Branch Moves

The Nichols Products Corp., 12953 Greeley Ave., Detroit, Mich., announces that the Pacific Coast branch of this company has moved to 311 Lewis Building, Portland, Ore. Mr. E. G. Drew is in charge of the Pacific Coast office.

SAN-ITAI-RIE FILLER

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For All Defects in Wood

Manufacturers in all wood-using industries find SAN-ITAI-RIE FILLER unsurpassed in filling cracks, worm holes, knot holes, open joints, dents, pitch pockets, etc., and through its use are able to send out their products without a flaw.

Put up in friction top cans—half pints to gallons—in 20 different colors. Send for sample can.

SAN-ITAI-RIE FILLER CO.

Division of

164-170 W. Kinzie St. G. J. Liebich Co. Chicago, Ill.

"Eliminate a Fire Risk"

NEWCOMB

SYPHON VENTILATED CABINET

THE "NEWCOMB" GIVES YOU everything you could want in a spraying cabinet and much more than you have thought possible.

Let us go over your spray cabinet problems with you. We can equip you for every spray cabinet requirement; Inside or Outside Installations.

Grand Rapids Blow Pipe and Dust Arrester Company

Dust Collecting Systems 527 Monroe Ave. Grand Rapids, Michigan

"WHAT IF IT IS A FISH STORY?"

* * *

EVENTUALLY

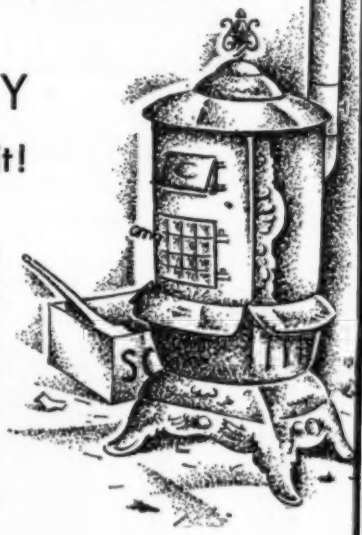
people will BELIEVE it!

* * *

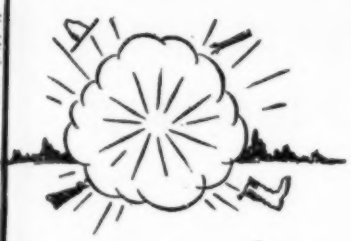
Years ago when the writer was a young lad living in a country town he used to hang out at the village "smoke house." Each night all the champions of the town came to this cigar store . . . checker champions, cribbage champions, champion story tellers, even champion liars.

One night, one of the latter joined in a conversation that had drifted to hunting. Years before, he said, he had started out with his trusty rifle slung over his shoulder, ready for a little first-class sport.

Proceeding to his favorite hunting grounds, located on the bank of a small stream, he had waded across the water and was climbing up the farther bank when to the right of him he saw three fat pheasants. Quickly he took aim and was just about to pull the trigger...a sound on his left diverted his attention. Turning, he saw a flock of quail, repointed his gun and, for the second time, prepared to pull the trigger . . . up from the bushes in front of him rose the largest bear he had ever seen!



Pheasants to the right of him, quail to the left of him, and a big bear in front of him! He aimed again, this time at old Bruin, and let go BOTH barrels! With a loud report the gun exploded, the bear



fell dead, the hunter . . . but let him tell the climax:

"Well, sir, the shot from both barrels went forward and killed the bear. The gun exploded . . . the right hand barrel flew off and killed the pheasants, the left hand barrel killed the quail. The gun kicked me into the stream and when I crawled out my boots were full of FISH!"

The old fellow *believed* it, too, because he had told it so often! And there is the moral of our tale. Tell a thing often enough and, like the hunter, you will believe it!

Watch out for guys who tell you business is awful. Their fish stories are exaggerated. It really isn't as bad as they make it out to be. It's just as easy to say business is great . . . even if you have to lie to do so. After all, like the old squire, if you say it often enough you'll believe it—and so will everyone else—and then, it *will* be great! Now, all together!

BUSINESS IS GREAT!

From another angle

People get ideas. And ideas become habits. And habits become so strong that we cannot break them.

More than fifty years ago the Egyptian Lacquer Manufacturing Company acquired the habit of solving difficult finishing problems. We *can't* break the habit, now.

While there is an Egyptian lacquer made for every job, every once in a while some client will present us with a special problem. But the solution IS found . . . sometimes easily . . . sometimes only after arduous research.

THE EGYPTIAN LACQUER MFG. CO., 90 West St., New York City

Branches in charge of practical men *maintained in*

ATLANTA BOSTON BUFFALO CHICAGO CINCINNATI CLEVELAND DALLAS DETROIT KANSAS CITY LOS ANGELES PHILADELPHIA PORTLAND, ORE. SAN FRANCISCO SEATTLE SPOKANE ST. LOUIS

The Maker Who is Proud of What He Makes Uses Egyptian Lacquer

To Readers Of

Industrial Finishing

This journal is designed especially to suit your particular needs and we want to know what information you desire, what problems or difficulties you have and how we can assist you in your work. It costs you nothing to make inquiries or to tell us what subjects you wish to see discussed in our reading pages.

Many times you have probably felt prompted to write some of your own experiences, opinions or ideas. Now is your opportunity. INDUSTRIAL FINISHING solicits articles from practical men and pays for all acceptable material.

Kindly express yourself by writing us just what subjects you would like to see covered by articles in the publication; or just what subjects you might write on for publication. Address your communications to

INDUSTRIAL FINISHING, Room 802, 222 East Ohio st., Indianapolis, Ind.

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Finishing Neon Electric Signs

By
WILLIAM G. MARTIN

Foreman finisher, Electric Products Corp. of Colo., tells about the cleaning, priming and finishing of metal surfaces, the treatment of raised letters, and the masking and spraying of flat letters in solid and multi-colored backgrounds

THE STEADILY increasing demand for Neon electric signs keeps a large force of sheet metal workers, glass blowers, electricians and finishers busy at the plant of the Electric Products Corp. of Colorado, at Denver. Plans are drawn for each sign, and the metal is cut and fabricated in the sheet metal department. When the metal covering of the sign is soldered on the frame work of galvanized angles, electricians install connections for the tubes.

Preparation of Metal Surface

For a long time reflections were a problem to the manufacturer of electric signs, due to the smooth surface of the metal backgrounds used. We have eliminated this by the use of a crimped, sheet metal background for our lettering. This serves a double purpose; it breaks up the reflections, leaving the background uniform, and it forms a surface to which our finishing materials will stick better. To insure the latter result, however, we must clean the metal thoroughly to remove the acid applied to the joints in soldering, and any grease which may have adhered to the metal.

After we have the metal clean, we spray on a primer which is cut very thin with lacquer thinner. For an extra smooth surface, we spray the metal with pyroxylin surfacer, and sand this when it is dry. If the job must stand close inspection, we smooth out any small irregularities in the metal by puttying and sanding off; usually, this smoothing is not necessary since the signs are generally viewed from a distance.

Sequence of Colors

Since a great many different colors and patterns are used on some of these signs, the application of colors in their proper sequence is the next step. As a rule we apply the lightest color first, masking with paper and rubber cement as required. When the lightest color is dry and masked, we shoot the next light color, and so on. Though this is the usual procedure, sometimes we spray light colors over darker colors (except on red) by allowing the background color to become dry and hard, then applying the lighter color in a thin coat so that it will dry quickly.

When it is absolutely necessary to spray a lighter color over red, the space to be covered must first be given two or three coats of aluminum paint and primed, sanded and surfaced, as in preparing the original surface—to prevent the red from bleeding through.

The many different patterns and colors of signs to be finished or refinished call for a variation in methods. For instance, in applying a red border to white raised block letters, the white must be masked, but the background is not masked if it is to be covered with black. The outlines of the red border are masked and sprayed. When dry, any red overflowing onto the background is given an extra coat of black in spraying the background. In masking the border of these raised letters, a strip of tape just the right width is applied.

Airbrush striping—while other colors of the sign are masked with paper.

Three coats of color are given the raised letters, but two heavy coats are usually enough on the background. Drying time ranges from 30 minutes to 1½ hours in summer and from 2 to 3 hours in winter. The final operation consists of spraying on two coats of clear lacquer for a smooth finish and protection of the color coats—and, if a high gloss finish is desired, we rub the finished surface with a lacquer polish.

Spraying Backgrounds

For flat lettering we usually spray a strip of background just large enough to contain the lettering, using the letter color, of course. Then we cut out paper patterns for the letters and cement these paper letters to the painted space, after which we spray in the background. Then we remove the paper letters, clean the surface, and spray it with clear lacquer.

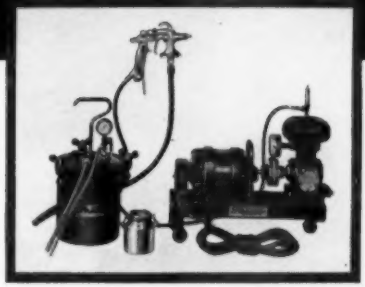
Frequently we are able to effect a considerable saving of time when finishing a background in several different colors (stripes for instance), by carefully outlining the procedure before starting the job. For example, where stripes of three different colors parallel each other, instead of shooting each stripe consecutively and masking, we spray the middle stripe first, mask it and then shoot a stripe on each side without further preparation. Any rubber or dirt adhering to the surface is removed with gasoline, and any defects in the surface are sprayed with a "touch-up" gun.

The sign is now ready for the electricians, but the finisher's job is not yet completed. Sections of the glass tubing must be blocked out to correspond with the color of the background against which it is to be placed. This is done

TRY AND MATCH *THIS*

NEW Presto

Spray Painting Outfit
With 2½ Gallon Pressure
Feed Material Tank



in design
-construction
-performance
-and price

Model 150. Price $169.50. No accessories to buy.

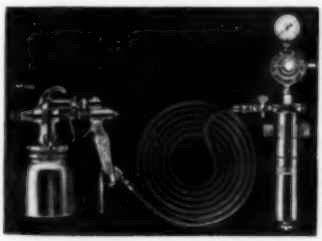
HERE is a new Presto outfit, with 2½ gallon pressure feed tank, that challenges comparison--even in far more expensive outfits -- for speedy, portable, efficient, one-man spray painting.

Match, if you can, the latest Ring Valve Piston type compressor, direct connected, with automatic safety valve.

The famous Presto pressure feed gun that produces a steady, uniform spray of light or heavy materials the instant the trigger is pressed.

The instantaneous needle valve adjustment for varying the size of spray and amount of material applied.

The two built-in air conditioning units that allow only clean, dry air to pass through the spray gun. The rugged construction--freedom from excessive fog and mist--and low cost, trouble-free operation on all finishing jobs, from furniture to machinery. Mail the coupon for complete details.



Presto Model 95-OC Spray Finishing Outfit for use with any standard compressor. Price complete, as shown, $47.50.

IF-9

Metal Specialties Mfg. Co.
338-352 N. Kedzie Avenue Chicago, Ill.

Please send me complete details on the Presto Model 150 and Model 95-OC.

Name _____

Company _____

Address _____

City _____

State _____

with a small brush, either while the tubing is suspended from wires or after it is attached to the sign.

The three long rooms devoted to finishing operations in our plant serve as booths, fresh air being drawn in at the front by fans located in the middle of the rooms, and foul air being exhausted at the back by other units. This is necessitated by the large size of many of the signs.

Masking letters on a sign with paper cutouts. In the foreground the letter cutouts are all pasted down ready for the background to be sprayed in.

Color Profitable for Fruit Baskets

Color has found its way into the fruit packages of the Western New York fruit belt. At the basket plant of a Western New York manufacturer more than 10,000,000 baskets are turned out annually, and the demand for color in these baskets indicates that the days of the uncolored baskets are rapidly disappearing.

Colored articles have come into popular demand and practically all of these 10,000,000 baskets were colored in some manner. Some were decorated with colored strips of veneer running around the top of the basket, while others were finished entirely in color.

The use of color has proved a distinct advantage in the selling of fruit. For several years one of the prominent fruit growers in the Hudson River Valley has packed his apples in bushel baskets which had hoops painted in light blue; the farm name and other markings were the same color. New York buyers soon came to recognize this man's pack, with the result that his fruit began to bring a premium on the New York market. Color had done its work. The use of color made his package stand out from the others.—A. J. Owen.

Rust-Proofed Sheet Steel

The Superior Sheet Steel Co., Canton, Ohio, has published a booklet containing interesting information about "Galvannealed," a rust-proof coated sheet steel, the surfaces of which are adapted to receive and hold paint, enamel and lacquer finishes. This booklet, entitled "Acknowledged Advancement," is attractively illustrated and has 24 pages 8½x11-in. in size.

Industrial Ovens and Heaters

The Gehnrich Oven Co., Inc., Long Island, N. Y., is distributing bulletins on ovens, gas and electric heated, for japanning, enameling, lacquering, insulating varnishes, etc., also industrial air heaters, indirect-gas fired, for air drying paint and varnish finishes, etc.

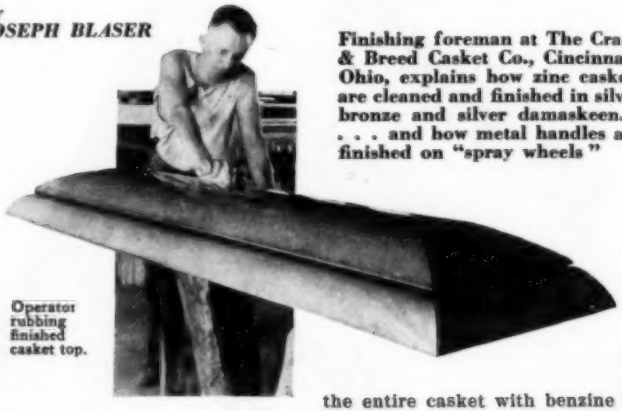
These bulletins are 8½x11-in. in size, printed and illustrated on coated stock paper and neatly bound in an attractive loose-leaf binder.

SOLVENTS
butanol
NORMAL BUTYL ALCOHOL
acetone
CHEMICALLY PURE
methanol
SYNTHETIC
diacetone
butaldyde
NORMAL BUTYL ALDEHYDE
butyl stearate
dibutyl phthalate
COMMERCIAL SOLVENTS CORPORATION
SALES OFFICES:
New York Central Bldg., 230 Park Ave., New York, N.Y.
Aldwych House, Aldwych, W.C.2, London, Eng.
PLANTS: Terre Haute, Ind., and Peoria, Ill.
Terre Haute, Indiana

Finishing Zinc Caskets

By
JOSEPH BLASER

Finishing foreman at The Crane & Breed Casket Co., Cincinnati, Ohio, explains how zinc caskets are cleaned and finished in silver bronze and silver damaskeen. . . . . and how metal handles are finished on "spray wheels"



Operator rubbing finished casket top.

THERE has been a gradual upward trend in the quality of caskets. The all-metal casket has dispelled the thought of sham, an exponent of the cloth-covered wood casket, and promoted the idea of permanence not only in theory but in fact. The metal casket has done more than this; it has created a demand for new finishes that must be both beautiful and dignified.

We manufacture both steel and zinc caskets, but I have selected the zinc for description of the finishing process because this metal is rarely finished, whereas steel finishing is more or less common practice. Zinc, you know, will not rust but it is a corrosive metal when subjected to natural atmospheric conditions in its raw state; hence we must do a little metal cleaning to prepare the surface for the finish.

The first operation is to wash the entire casket with benzine to remove any free precipitate which may have collected on the surface from corrosion. Then we sand the entire surface with No. 180 sandpaper to insure a perfectly smooth foundation for the finish. Our final cleaning operation is to wash the metal surface with lacquer reducer. The casket is then in proper condition to receive either one of the rubbed finishes, or damaskeen.

For the silver bronze finish we mix 4-oz. of aluminum and 3-oz. of gold bronze to one gallon of clear lacquer. Of course, this proportion may be varied to obtain a different base shade, but it is advisable to avoid mixing more of this material than can be used in a comparatively short period of time. If allowed to remain out of use or without frequent agitation, the mixture will form a jelly which is insoluble in lacquer reducer.

This mixture is sprayed over

ANNOUNCING

A *New* IMPROVED METHOD *of* INDUSTRIAL FINISHING

NICHOLS CONDENSVEYOR SYSTEMS

ASSURES

SAVINGS *in* *Space* *Material* *and* *Labor*

INCREASE *in* *Flexibility* *Uniformity* *and* *Production*

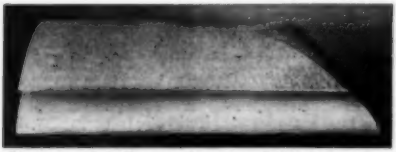
Write for Bulletin 107 which gives full details and complete information.

NICHOLS PRODUCTS CORPORATION

12953 Greeley Ave., Detroit, Mich.

NEW YORK CLEVELAND CHICAGO PITTSBURGH PORTLAND, ORE.

the entire outer surface of the casket and allowed to air dry for 30 minutes. Then the surface is sanded with No. 220 sandpaper, cleaned off, and a second coat of the same material is applied.



Close-up of half a casket top finished in silver damaskeen.

After air drying for 30 minutes, the casket is returned to the spray booth to be highlighted. Black lacquer is used for this purpose. When dry, a spray coat of clear gloss lacquer is put on. We allow this to dry for about 12 hours and then rub with No. 3 polishing compound. These three coats, not counting the decorative highlighting coat, produce a beautiful, deep silver bronze finish.

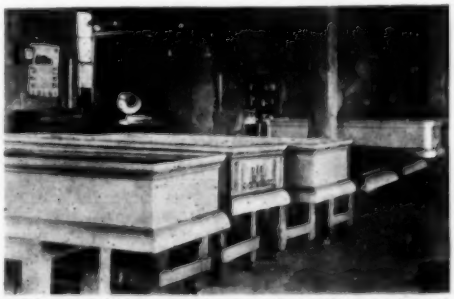
The damaskeen finished casket is a combination, having the ogee and bottom base moulding in silver bronze (described above), the lid and panels in damaskeen.

The zinc surface is prepared and cleaned for the damaskeen finish exactly the same as for the silver bronze. A spray coat of damaskeen is applied and the casket is placed in the oven where it remains for two hours at 225° F., which produces the wave effect.

After this coat has thoroughly cooled, the casket is returned to the spray booth where a coat of silver bronze is sprayed over the brown damaskeen. For this decorative coat we mix aluminum, gold bronze powders and clear lacquer to make the desired shade of finish; this should be mixed as dry as possible, that is heavy with aluminum and gold bronze powder, with just enough clear lacquer to bond the powders to the surface. Also in spraying it is advisable to mist this coat over the damaskeen.

All of these precautions are necessary to prevent softening the damaskeen under the fast drying lacquer with which this decorative coat is mixed. Ordinarily one coat is enough to cover the damaskeen satisfactorily, but in the event the first mist coat is not sufficient, it is far better to apply a second mist coat after the first coat has dried than to risk softening the damaskeen by spraying on too heavy an initial coat. This completes the damaskeen finish.

In manufacturing separate casket handles, which is another division of our production, we are compelled to produce a wide range of grades and finishes. Some of these are polished nickel; others



View in finishing room showing a few caskets on elevated caster-wheel trucks, ready to be finished; spray booths are in background.

ANOTHER TRIUMPH OF GENERAL ELECTRIC RESEARCH

SAVE
the cost of two operations

with G-E-Glyptal Lacquers
REG. U.S. PAT. OFF.

"INDUSTRY'S LIQUID ARMOR"

BIG PRODUCTION has radically Reduced Prices

COLORS

Red	. .	No. 1201
Clear	. .	" 1202
Blue	. .	" 1206
Black	. .	" 1209
Brown	.	" 1210
Green	.	" 1211
Aluminum		" 1212
Gray	. .	" 1214
Gray	. .	" 1217

Every good paint job on plant machinery requires you to prime, fill, sand, size and paint. With G-E Glyptal Lacquers you don't prime . . . you don't size. The new synthetic resin base of these lacquers does it for you. What a saving!

And the tough, glossy surface of Glyptal Lacquers performs many services. It not only protects . . . withstanding heat, oils, weak acids, alkalies, steam . . . but it also seals—and lasts! Long-run paint cost is low.

You can get G-E Glyptal Lacquers quickly from G-E Merchandise Distributors everywhere. Or write Section M-849, Merchandise Department, General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

GLYPTAL LACQUERS

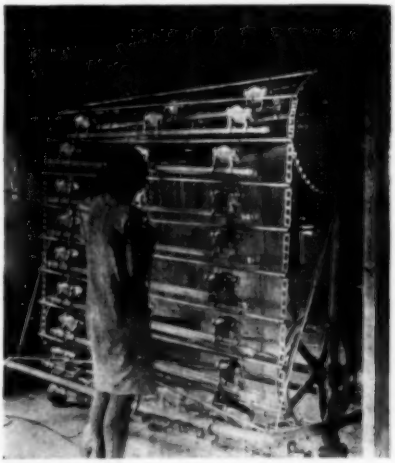
MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

are in colors such as orchid, white, etc., while still others are in burnished steel, which only require a protective coat of clear lacquer.

Unlike many other metal products to be finished, these handles come to the finishing room in proper condition to receive the finish, that is cleaning operations are unnecessary. We operate two spray booths entirely on handles, one a color booth, the other for clear lacquer finishes.

To speed up production we have developed the spray wheels (revolving carriers) shown in the accompanying illustration. Each wheel holds 20 sets or 40 complete handles. These spray wheels are loaded with handles in the assembly department and delivered to the finishing room where the entire wheel (portable carrier) is placed in the spray booth.

When fully loaded, the wheel is evenly balanced, making it an easy task for the operator to turn the crank which revolves the carrier, without stopping the spray. After drying, the loaded spray wheels are rolled to the wrapping tables where the handles are wrapped and packed for shipment.



Portable "spray wheel" or revolving carrier on which handles are mounted for spray finishing at regular spray booth.

Color Mixtures for Various Tints, Shades and Hues

This article, by request, is a continuation of my article in July issue beginning on page 60 and appearing under the same title. There are many color cards bearing colors of the same name, but it is seldom that any two colors are exactly alike, as every color maker has his own ideas of certain tints, shades, hues and tones of recognized colors. For example, apple green appears on some cards as a deep green of olive cast, whereas a true apple green is a very light yellow-green — practically a light yellow with a green cast.

All parts given in my list are measured by weight. Again let me suggest to color users: "Buy only the best materials, and you will be rewarded by the best results."

Daffodil Yellow

White .....(parts by weight)	300
Medium chrome yellow.....	26
American scarlet vermilion.....	1
Cobalt blue	1

Dahlia

White	24
Cobalt blue	7
Tuscan red	3

Dark Drab

White	40
Burnt umber	1

A dip tank and the Lux System that protects it in the plant of the General Motors Truck Co.

AUTOMOBILE MANUFACTURERS, probably the largest users of lacquer and enamels, have turned to the Lux System to protect dipping tanks, spray booths and ovens. Already Lux Systems have saved four of their plants from fire disasters.

Automobile makers have found that Lux not only snuffs out fires quickly, but harmlessly as well. The lacquer, remaining in dipping tanks after fires, has always been used again. Ovens have never been damaged by the extinguishing agent.

The free booklet "Snuffing Out Fire" tells how Lux will protect your lacquer hazards, how it eliminates water and chemical damage to material and equipment, and how it prevents production tie-ups. Send for a copy.

Walter Kidde & Company, Inc.
140 Cedar Street
New York

11 Automobile Makers Protect Lacquer Dipping with LUX

Lux Systems are installed in the plants where the following automobiles are manufactured: American Austin, Chrysler, Dodge, General Motors Trucks, Hudson, Hupp, Marmon, Nash, Olds, Plymouth and Willys-Overland.

LUX

DRY—HARMLESS
FIRE EXTINGUISHERS

Dark Gray

White 54
Lamp black 1

Dark Stone

White 20
Raw umber 1

Deep Purple

White 5
Ultramarine blue 1
Rose pink 1

Deep Rose

White 10
Red lake 1

Deep Scarlet

Bright vermilion 15
Ultramarine blue 1
Rose pink 1

Delft Blue

White 164
Prussian blue 9
Burnt sienna 1

Dove

White 150
Raw sienna 1
VanDyke brown 1
Burnt umber 1

Dove Gray

White 200
Ultramarine blue 5
Black 2

Drab

White 88
French ochre 10
Lamp black 2

Dresden Blue

White 200
Prussian blue 1

Dull Gilt

White 31
Light chrome yellow 3
Raw umber 1
Raw sienna 1

Dusk Blue

White 64
Ultramarine blue 5
Raw umber 1

Dust Color

White 82
Lamp black 3
Medium chrome yellow 2

Dutch Blue

White 13
Ultramarine blue 5

Ecru

White 108
Light chrome yellow 1
Raw sienna 1
Raw umber 1

Eggplant

Mauve 3
Drop black 1
Ultramarine blue 1

Egyptian Red

White 3
Scarlet vermilion 2

Electric Blue

White 5
Cobalt blue 2

Elephant

White 8
Raw umber 1
Lamp black ..... (touch of)

Empire Blue

White 18
Prussian blue 1
Light chrome yellow ..... (touch of)

Evenglow

White 120
Cobalt blue 5
Tuscan red 1½

Evergreen

Deep chrome green 12
Raw sienna 2
Lamp black 1

Fawn

White 19
Burnt umber 2
VanDyke brown 1

Fern Green

Lemon chrome yellow 5
Light chrome green 1
Black 1

Firecracker Red

Scarlet vermilion 15
Medium chrome yellow 1

Flesh

Whte 86
Raw sienna 2
Lamp black 1

Flesh Color

French ochre 19
Deep English vermilion 1

Flesh Pink

White 110
Orange chrome yellow 1
Red lake 1

Fog Gray

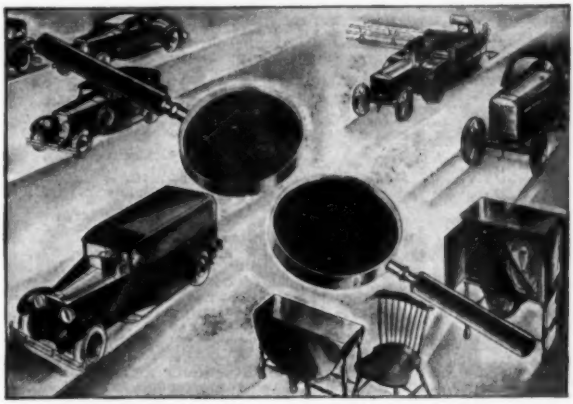
White 178
Lamp black 1

Foliage Brown

VanDyke brown 50
Orange chrome yellow 50

Foliage Green

Medium chrome yellow 3
Black ..... ½
Burnt umber ..... ½



Users Turn To REZYL-Formulated Lacquers for Quality

User after user is adopting Rezyl-formulated clear and pigmented lacquers. Rezyl quality is the answer—the quality that is demonstrated by Rezyl endurance, by its ease of application and by the fine appearance of the finished work. Many lacquer makers are now registering outstanding success with their Rezyl Lacquers.

Rezyls are opaque to ultra-violet light; and Rezyl-formulated lacquers are suitable for inside or outside use on wood or metal, outlasting other lacquers and even varnish films by as much as three to one.

Only with the exclusive advantages of Rezyls can lacquers meet the new demand for endurance. Insist that your lacquer-supplier submit formulas containing Rezyls.

Sole Sales Agents for the Nitrocellulose produced by our subsidiary, American Powder Company

Industrial Chemicals Division

American Cyanamid Company

535 Fifth Avenue New York

Canadian Distributors: Wilson, Paterson, Gifford, Ltd., 101 Murray Street, Montreal; 275 Campbell Avenue, Toronto

Forest Brown

White 21
Raw sienna 3
Burnt umber 2

Forget-me-not

White 90
Prussian blue 1

French Blue

Cobalt blue 5
White 1

French Blue

White 40
Prussian blue 3
Venetian red 1

French Beige

White 14
Burnt umber 1

French Gray

White 33
Drop black 1
Raw sienna ..... (touch of)

French Yellow

Medium chrome yellow..... 12
Burnt umber 1
Deept orange chrome..... 3

Fushia

White 25
Mauve 1
American vermilion 1

Gazelle

White 108
Venetian red 1
Lamp black 1

Geisha Pink

White 140
American vermilion 6
Mauve 1

Genetian

White 95
Cobalt blue 10
Mauve 1

Geranium

White 1
American vermilion 2
Alizarin crimson 1

Gobelin Blue

White 90
Prussian blue 1
Cobalt blue 1

Gold

White 9
Light chrome yellow..... 21
Venetian red 2

Golden Brown

Burnt umber 12
Medium chrome yellow..... 8
Venetian red 2

Goldenrod

White 5
Light chrome yellow..... 3
Medium chrome yellow..... 1

Golden Tan

White 42
Raw sienna 3
Burnt sienna 1

Golden Yellow

White 9
Light chrome yellow..... 21

Golden Wheat

White 64
Raw sienna 3
Burnt umber 1

Gold Russet

Lemon chrome yellow..... 5
Venetian red 1

Golf Green

Light chrome yellow..... 1
Emerald green 6

Gooseberry Green

White 38
Emerald green 18
Medium chrome green..... 2
Light chrome green..... 1

Grapenut Brown

White 140
Burnt sienna 2
Raw umber 1
Light chrome yellow..... 2
Raw sienna 14

Grecian Rose

White 35
Venetian red 1

Green Blue

White 100
Lemon chrome yellow..... 5
Ultramarine blue 3

Green Gold

White 160
Light chrome yellow..... 60
Venetian red 1½
Prussian blue ..... ½

Green Stone

White 94
Sylvan green 3
Raw umber 3

Gun Metal

White 8
Lamp black 1

Gypsy Red

White 1
American vermilion 2
Alizarin crimson 1

Havanha Brown

Burnt umber 2
Raw sienna 3

(Continued on Page 83)

JONFLEX

[Industrial Tape]

Reduces Finishing Costs....

Have you seen the new Johnson's Tape Dispenser? Holds full size roll of tape up to 1½ inches wide. Enables you to cut any length of tape instantly. Eliminates pre-handling—no waste.

JONFLEX has been developed for masking on the finest of work—that's the reason for its precision edge. It is just as economical and decidedly more advantageous for every kind of job and where a saving of time and reduction in finishing costs become a competitive factor. In the auto plant, aeroplane, in furniture manufacturing, toy making and electrical equipment; in fact, wherever masking tape is used, Jonflex is given preference, because it adheres quickly, is not affected by solvents and strips off clean without leaving a trace of "fuzz" or "ravel."

Sample Roll Free!!

JOHNSON & JOHNSON, New Brunswick, N. J. I. F. S.

Please send free sample roll of Jonflex Industrial Tape and information on the Tape Dispenser.

*Name*_____

Company _____

Street and No. _____

*City*_____ *State*_____

Improved Methods of Finishing Steel Partitions

By
ROBT. G. MUDGE

Foreman finisher, now with a steel partition manufacturer, gives his impressions of this industry, and lays particular stress upon the choice of color and decorative effects, the employment of modern metal cleaning and finishing equipment, and the use of materials particularly suited to economical quality production

THE FIELD for steel partitions is one of the largest at this time, and it is growing rapidly. Today, the finish is unquestionably the outstanding feature in selling partitions—especially the color schemes, some of which are in two-tone or wood-grained or other combinations that are attractive and which blend harmoniously with the interior decorations of various rooms.

Metal partitions are divided into many classes and are given various trade names by the different manufacturers. Summed up in general, they include the following: office, factory and toilet partitions. Much has been done to improve the machining, assembling and erecting of partitions, making them interchangeable, etc., but the manufacturers must also fall in line with the modern trend and supply the demand for beauty, color and decorative effects.

The modern business man knows that steel partitions have certain recognized merits; for example, he knows offhand that they are fireproof, and a ten minute talk, with perhaps a few illustrations, ought to convince him of their strength, durability, etc. What added attraction for a better looking office, toilet room or factory than a well blended color scheme? The modern toilet room fixtures are a good example.

Decorative Design

In the past, steel partition manufacturers tried to standardize on one or two colors—drab colors as a rule. They would talk steel partitions to a prospective buyer and then, as an afterthought, add that the partitions came in two standard colors, black and white. Think of all the attractive colors or combination of colors which would be so easy to feature and which would do more to sell the partitions to the customer than anything else. I say this with all due respect to partition manufacturers, knowing as I do that in many instances, in various shops, a job has been allowed to reach the finishing department before the specifications for paint, color, etc., had been thoroughly investigated.

As stated before, much has been done in the other departments towards improvement, but very few partition manufacturers have a modern paint shop. In some shops finishers are obliged to use much

Impervious Clear BREVOLITE

is a weather resistant lacquer.

Various tests such as long continued weather exposure and salt spray have proven this material to have remarkable resistance to the elements.

A sample will be gladly sent so you may determine its unusual durability as an outdoor clear lacquer.

BREVOLITE LACQUER CO.

(formerly Waukegan Chemical Co.)

North Chicago, Illinois

"Values That Endure"

obsolete apparatus at a great expense not realized by the manufacturers. Modern equipment really pays, especially now that there are so many improved processes to be installed and used to produce the quality finish that must be used to meet competition during the coming years.

Finishing steel partitions has many problems, one of the chief ones being occasioned by the various size pieces including posts, up to 15-ft. in length and panels of small and large sizes. Then consider the way these pieces come to the finisher; some are assembled while others "knocked down," as should be the case when 2-tone or 3-tone finishes are wanted. Suitable equipment for handling these various size pieces in a modern way is sometimes costly, but in a short while it pays for itself.

Metal Cleaning Equipment

Cleaning the metal surfaces is one of the difficult problems. Some manufacturers still use benzine to clean the oil and grease, and then workmen wipe the surfaces by hand. This is objectionable because of the fire hazard, and it is costly from a production standpoint because each piece must be handled twice—first cleaning with the benzine, and then wiping dry. A more up-to-date method is to use a cleaning machine or large tanks of solvent consisting of volatile materials that cut the grease but which do not remain on the surface. This eliminates the use of water, which often makes spots, and it dispenses with a heating process.

If a machine is used, a second tank or compartment is necessary to remove the residue caused from the volatile chemicals. I believe at this time there is an ingredient which, when added to a tank of the aforementioned compound, will absorb the residue until it is wiped away.

Much thought must be given to the selection of the cleaning machine or the cleaning tanks; there is the matter of sufficient size to permit cleaning both small and large pieces. Then consider the best way of hanging the pieces being cleaned. The same is true in each process in finishing partitions. Space always demands first consideration. Workmen must be able to stack the various size pieces, and keep these pieces moving in order to eliminate extra handling, which is expensive.

Primer and Finish Coats

A new method of priming that does not require baking has several merits. This primer dries fast and is baked after the second coat is applied. Primers are now perfected which air dry and may be baked with the second coat, or they may be allowed to dry and support a lacquer finish. A new priming material made with synthetic resin is especially good, having atmospheric resisting properties. This is a very effective operation and one that a progressive manufacturer who has been handling his material twice will appreciate. This operation makes for economy in finishing, saves handling, and also saves restacking the material—and successive coats may be applied in a very practical way.

With all the large colorful office buildings being erected, competition is growing stronger, and a satisfied customer, with one or more rows of attractive partitions extending through his office, is a splendid form of advertising.

Our new Combination Uniforming Stain has revolutionized finishing of radio cabinets —
Eliminates three operations!
Stains and fills at the same time.
Fast to light ... supplied in various shades of either Walnut or Mahogany.
While this Combination Stain and Filler is being used by many of the world's largest manufacturers of radio cabinets, its use is by no means restricted to radio cabinets—it can be used on furniture, fixtures, and many other products.
Write today and let us tell you more about this sensational product.... and also about the complete process that is being used with this stain.
INDIANAPOLIS PAINT & COLOR CO.
INDIANAPOLIS, INDIANA.

Materials for Fine Rubbing and Polishing

Most articles we handle are of fancy shapes in small lots and rarely of large dimensions; consequently the polishing and buffing machine designed for large plane surfaces is of no avail so far as we are concerned, and it will hardly save any time if we were to use it partly.

Several years ago we bought a complete set of dentist's tools—motor, flexible shafts, mandrels, wheels, buffers, etc., of all sizes, and expected great things. After giving it a thorough trial for a period of more than six months, we finally came back to the older methods.

Those of us who are obliged to tackle many different articles of irregular shapes are better off with hand work than with machine work; besides we have to use our finger tips and the skin of our palms in the end any how. The following materials were used for a considerable time on different items for careful comparison:

For rubbing down: (In powder form; used with water or oil) pumice stone, rottenstone, Arkansas stone, carborundum, chalk, whiting, ashes, charcoal, vegetable fiber, metal wool, compounds, etc., sandpapers, and stones in block form.

For buffing or polishing: flannel, linen, paper, old cotton rag, chamois, sponge, brushes, ashes, rouge, many compounds on the market, etc.

The result is that now we are using, on more than 90% of work, charcoal for rubbing and bone ashes for polishing.

Charcoal can be made from most woods, but the softest and finest charcoal is made of Lagerstramia Indica. Paulownia Imperialis gives charcoal of medium hardness. The trees like Camelia, Planera, magnolia Hypleuca, etc., furnish charcoals of much harder quality, and cut down a surface much quicker.

They can be used in powder, stick or block form—whichever is most convenient. We almost always use these abrasives with water, and very seldom if ever with oil.

Of ashes, those made from so called animal bones are not satisfactory. Those made from deer horns are the best. We found quite a large quantity of useless old articles of ivory and deer horn, also their shavings, so we make the ashes ourselves. A little will go very far. The bone is burnt in open fire until white and later crushed with mortar and pestle into a fine powder. These are used with oil. I believe charcoal will be missed by any one who has once used it.—F. S. Araki.

Automotive Woodwork Lacquer

For automotive woodwork the oil-type putties and surfacers need not be radically different from those in common use over metal surfaces, but nitrocellulose surfacers must be of a more flexible type than those commonly used over metal. A flexible lacquer is absolutely necessary. If correctly formulated these lacquers are in the same durability class as the best lacquers in use on metal automobiles. Because of their flexibility they remain soft for a longer period than regular automobile lacquers and they are not designed to be rubbed and polished. However, they have a much better flow, and dry to a luster so that polishing is not necessary.—E.

"Finish" — *the outstanding sales argument in marketing furniture!*

"Unquestionable Quality"
Products For Every Phase of Finishing

Bleach, Stain Powder, Oil Stain
Shellac, Sealer
Quick Drying or Regular Fillers
Shading Stains
Gloss and Flat Lacquers
Rubbing Oils
Clean-up Polishes, etc.

Many beautiful designs become "close-outs" because they lack appeal, whereas the correct finish coupled with proper design and workmanship give to pieces an established character that creates sales at profitable figures.

Our service helps manufacturers to obtain the best effects through wise selection and use of proper finishing materials, formulated to match woods and designs. Upon receipt of such information as design or styles and woods being used in construction of products, we gladly submit sufficient quantities for test purposes in the manufacturer's own plant. No obligation follows, no influence exerted through high pressure salesmanship. In most instances, our new products fit into particular needs of the day.

Let this finishing phase of your production receive serious consideration, give "DOLAN & CO." an opportunity to work with you. Write us NOW!

V. J. DOLAN & COMPANY, Inc.
1830-32 N. LARAMIE AVE. CHICAGO, ILLINOIS

FOR GRAINED FINISHES

Whether you use plate or roller, hand-graining or decalcomania, you will find that our #342 Sanding Sealer, #303 type Gloss and #313 Flat Lacquer will give superb results over the graining and secure the suavely realistic tone you desire.

Modifications of the finish permit of roller coating, and of dipping even the most difficult shapes.

For outside exposure, such as automotive work, our #631 Lacquer has shown remarkable resistance to actinic rays and salt spray.

We have given intensive research to the matter of finishes for grained metal, composition and Presdwood and our results are at your service.

Joseph F. Glidden
Founder and President

THE VARNISH PRODUCTS CO.
12900 Berea Road
Cleveland, Ohio

Questions and Answers

This service department is conducted to meet the reader's need for prompt information on specific problems, and to give others an opportunity to review the questions and to offer any further comments or recommendations pertinent to subjects mentioned

Spraying Inside Corners

In testing out some of the newer types of non-fading, non-grain-raising, quick-drying spraying stains, we have had considerable difficulty in spraying the stain into the corners of some of our smaller wooden trays and boxes. There seems to be some sort of air currents set up when we attempt to spray into a corner, and this "splits" the stain or finish as it comes out of the gun, resulting in the stain running to the sides of the corner and leaving a distinct white unstained line down the corner of the box.

We had the same difficulty on a special job about a year ago, spraying flat lacquer in large drawer corners. The order was rather a small one, and we overcame the trouble by touching up the corners with a small brush, by hand. However, on the proposition which is now under consideration, this hand work cannot be tolerated.—T. W. Mfg. Co. (Office furniture).

I suggest you cut your air pressure down to about 60-lbs., and spray directly into the corners of the small wooden trays and boxes. By this I mean to stain all four corners before beginning to stain the remainder of the box. By doing this when you start to finish the trays or boxes, you can spray each box and tray completely and every one will be stained uniformly including corners. It is necessary to hold the spray gun about 14 or 15-in. away from the work when spraying stain.

When the air pressure is too high, it has a tendency to blow the stain away from the wood, and in doing so the stain doesn't have a chance to soak into the wood. By using lower air pressure and holding the gun the correct distance from the work, you will get satisfactory results.—T. R. Nall.

How To Gain Ideas

Many, many years ago my grandfather used to tell me "Three men met at the corner. Each had three ideas and they volunteered to exchange them. Upon parting, they all had nine ideas each. Yet they had lost nothing."

I remember something like this in my childhood textbook. "Seven beautiful virgins in a row. They all had a candle each. An old lady came by and gave one of the girls a light; she in turn gave the next girl a light and so on. Pretty soon they all had a light to see in darkness and none had lost anything."

So far I am unable to finish any copy of INDUSTRIAL FINISHING without being reminded of these two stories, and smiling one or more smiles of satisfaction.—A. Reader.

M&W Co.
1876
CLEAR PRISMLAC
No. 23
The New and Different
Decorative Finish
Applicable to Smooth Metal, Wood or Composition.
Just Spray and Watch it Crystallize.
Air Dries In Less Than One Hour.
May We Suggest How PRISMLAC May Be Applied to Your Product?
Your inquiry is invited
MAAS & WALDSTEIN CO.
Executive Offices and Plant
138 Riverside Ave. Newark, N. J.
Chicago Office and Warehouse
1115 W. Washington Blvd.
Los Angeles Office and Warehouse
1214 Venice Blvd.
This background is a photographic reproduction of M & W Prismlac

Traces of Rubbing On Lacquered Walnut

My firm is getting out a fine walnut job finished in lacquer. We are rubbing the lacquered surface, first using water and then lemon oil, but after it is wiped well with cotton waste, it has that smeary look. I would appreciate very much to know some wash I could use to remove this smear.—E. T.

I suggest you rub these smeared surfaces with liquid made up of the following ingredients measured according to the proportions given:

Rubbing oil	3½-gal.
Turpentine	1-gal.
Lemon oil	3-oz.
Alcohol	1-qt.

Shake well as each ingredient is added. Then apply with cheesecloth and wipe vigorously with the grain. Then dry off with clean cheesecloth.

Here is another formula, but it includes materials that are more expensive:

Beeswax	¾-lb.
Bayberry wax	¾-lb.
Carnauba wax	¾-lb.

Dissolve in 3 gallons of turpentine by heating. When cool, add 5 gallons of naphtha. Stir while adding the naphtha.

Apply same as material mentioned in preceding formula.—T. R. Nail.

Finishing Metal Caskets in Gold, Bronze and Silver

We have considerable trouble at certain times with our finish on metal caskets when finished in gold, bronze and copper, but we have no trouble with silver finishes. The materials we use include Armco Ingot iron, lead coated sheets, and soldering fluid for soldering. All caskets are cleaned with benzine and then steelwooled.

Our finish consists of a primer coat of enamel, two coats of bronzing and two coats of clear top lacquer, after which the surface is rubbed and polished. The gold finish bronzing powder is pale gold ink, which is the most troublesome, with heavy streaks and large spots showing up when the clear lacquer has just about started to dry. We would appreciate an explanation of the cause of this trouble and a remedy to overcome it.—I. C. Co.

The trouble you have at certain times with your gold bronze finished caskets is caused by two things:

1—When you lacquer the caskets, you flow too much lacquer on them. The lacquer softens up the bronze and causes it to part from the metal or float away in the clear lacquer, and when the lacquer sets, this condition produces the streaks and spots you complain about.

2—You use too much bronze powder in the mixing; try 12-oz. to the gallon. If not used properly, this powder will fall to the bottom of the tank, and when the operator is spraying, the powder will come through the gun in varying amounts—sometimes too much and sometimes too little, and this will cause spots when the bronzed surface is lacquered.

The reason you don't have trouble with silver is because the silver bronze is lighter, as it is made with aluminum and brass powder, and it stays suspended in the solution longer than gold bronze which is heavier.

I suggest putting on three light

Sample our Service

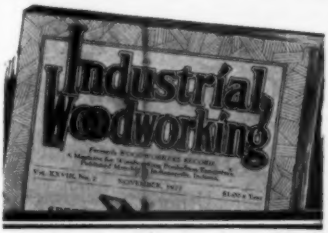
You are offered more than fine quality finishing materials by Thresher. In meeting your demands we give prompt personal attention to your problems. When you buy Thresher Varnishes, Enamels and Lacquers, you get service that means something. Give it a trial.

THE THRESHER VARNISH COMPANY

1150 E. Monument Ave. Dayton, Ohio

Varnishes, Enamels, Lacquers

Helpful for your woodworking department—



SEND FOR COPY OF THIS MONTHLY PUBLICATION

Management, production superintendents, foremen, production and maintenance engineers follow it closely each month for the latest information on woodworking production problems, the new machines and improved methods, to cope with presentday competition.

PRACTICAL PUBLICATIONS, INC.

912 Wulsin Building **Indianapolis, Indiana**

Reduced from Panel 10"x14"

Crystal Finish
on
Soft Wood
Using
CRYSTAL
SEALER
FOR
UNDERCOAT
Write for Particulars
HENRY V. WALKER CO.
Elizabeth New Jersey

coats of lacquer instead of two heavy coats. If this doesn't overcome your trouble, I suggest you try putting less powder in the solution, leaving suitable drying time in between coats.—August L. Medel.

Linseed Oil Under Lacquer?

Relative to T. C. C. Co.'s question under the above title in June issue, page 70, I suggest that if an undercoat must be used, that the company use a clear lacquer, but not linseed oil. Linseed oil is unsuited for use under lacquer; it requires a long time to harden and there will be small areas or spots on the wood where it will not sink in, and lacquer will not dry on these spots. Also, if any mouldings are included on the woodwork, you will find blisters on these uneven surfaces. If the wood is well dried and coated all around with a suitable oil-base primer, one that is especially made for use under lacquer, then little trouble will be experienced.—J. K. Cooper.

The crackle finish has become popular, reproducing what was formerly a failure in the use of lacquers.

Barner Now with DeVilbiss

Mr. T. E. Barner, formerly with Binks Spray Equipment Co., at St. Louis, Mo., announces his connection with the DeVilbiss Co., of Toledo, Ohio, where he will be located.

Black Popular for Cars

According to the August issue of *"Automobile Color Index"* published monthly by the Duco Color Advisory Service, black seems to be the most popular automobile finish. "For the first time on record since the introduction of lacquer finishes in place of paint and varnish, black has superseded all automobile color families."

BRILLIANCE
DEPTH
RICHNESS

The Spray Gun Turns OLD MASTER

Now the spray gun turns out fine old-time rubbed-varnish finishes. The beauty of the grain is brought out in natural, rich, warm tones. There is no change in method . . . no increase in cost. All the improvement, is in the product itself . . . . *Roxalin Warm Tone Rubbing Lacquer.*

There need be no more grayish, lifeless lacquer jobs on wood. The high index of refraction of this lacquer film gives the full depth of the former built-up varnish job. This new lacquer rubs like the old varnish. You get the old-time quality with the modern production method.

Write for our research bulletin fully describing this revolutionary material.

Roxalin Flexible Lacquer Co., Inc.
105-09 Seventh Ave., L. I. City, N. Y.

BILDIN KOTER

A clear coating that has the building qualities of Varnish and the durability of Lacquer. BILDIN KOTER does not bleed the stains and will neither soften nor shrink the filler. It dries in 20 minutes and can be recoated in 3 hours. BILDIN KOTER is best suited under Varnish. The low price is surprising. Write for a liberal sample to make your tests at our expense.

Southern Lacquer Co.
BALTIMORE MARYLAND

New Materials and Equipment

Presenting briefly, certain outstanding features of new or improved materials, supplies and equipment which have been developed and made available for use in modern industrial finishing departments

Industrial Vacuum Cleaner

The Breuer Electric Mfg. Co., 852 Blackhawk St., Chicago, has recently placed on the market a new type industrial vacuum cleaner of the portable tank type. It is designed specially for heavy duty work in cleaning machinery, motors, overhead pipes, girders, walls, floors, office rugs, as well as many other industrial applications.

The Model 70, "Tornado," employs an oversize 2/5-h.p. G. E. universal motor, mounted on

Norma precision ball bearings. The motor is mounted on a cast aluminum cover, which fits over a steel tank finished in aluminum. Complete set of attachments is furnished to take care of any cleaning requirement.

A special feature is the possibility of removing motor from the cover to be used as a portable blower. Other features are ample power, easy portability and low cost.

Conveying System for Finishing Department

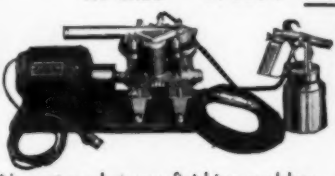
The Nichols Products Corp., 12953 Greeley Ave., Detroit, Mich., announces the Nichols Condensveyor System as a new and unique development in industrial finishing. It is a combination of the latest in:

1—Oven construction and design.
2—Materials handling and conveying.
3—Paint storage and color uniformity.
4—Air distribution and control.

The ovens are built of the patented Sadwith Panel construction, using a non-dusting insulation and having a minimum of "through" metal. They are of the inclined bottom entry type thereby maintaining an air and heat seal. The heated air is uniformly distributed throughout the oven thereby insuring an even bake.

The condensveyor presents the new development of material handling. The parts are hung on cross bars and trolleys permitting parallel or crossbar operation through the oven and tandem monorail operation outside the oven. Parallel operation condenses the material into the smallest possible space, shortens the ovens and saves floor space. Tandem operation permits the easy hanging and removing of

This Amazing New SPRAY PAINTING OUTFIT Gives Unrivalled SPEED WITH ALL MATERIALS

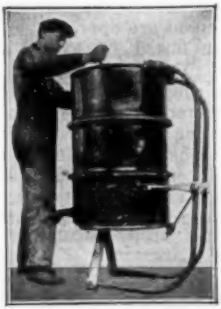


No matter what your finishing problem may be . . . no matter what types of materials are used . . . no matter what your operating conditions may be - - the Super Spra-more "55" will do the job faster and more economically than equipment selling at twice its price! For example . . . with ordinary light materials, the "55" will throw a finely atomized fan 12 to 14 inches in width. With heavy finishes, a fan 6 to 8 inches wide. On coverage, the "55" will spray 1 quart of four hour enamel in 1 minute and 28 seconds! Picture the savings in your own finishing department!

Install just one Super Spra-more "55" . . . make an actual operating comparison between the "55" and present equipment, and the saving in finishing costs will be instantly apparent!

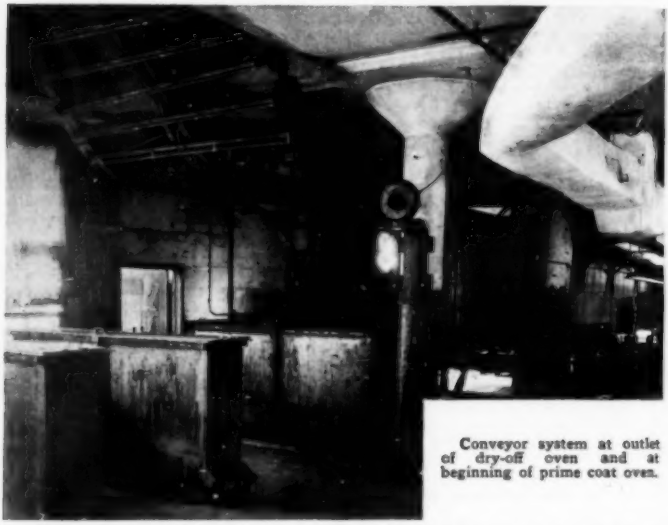
Here are the mechanical points of superiority: Has painting power positively unequalled in ¼ H.P. units . . . unrivalled for speedy application of heavy materials . . . design positively eliminates all ordinary compressor troubles . . . new type air cleaner . . . automatic safety starter automatic pressure unloader . . . 100% water condenser . . . Crown 14 spray gun with pressure quart container . . . 15 ft. of air hose and fittings. Easily portable, weighs only 45 pounds.

Crown Spray Gun Manufacturing Co. Write Today for Complete Details! 1218 Venice Blvd., Los Angeles, Calif.



The SAME good SENSE that ships shellac in wooden barrels specifies that container as absolutely safe for pale pigment lacquers with stirrer-bars double-tinned to get the security always had in the old days in the transport of pigmented shellac or "shellac lacquer" which was a similar problem. Installation and manipulation of wood barrel equipment is simple, very much like that here shown.

C. E. Farrington Co. **Phoenixville, Pa.**



Conveyor system at outlet of dry-off oven and at beginning of prime coat oven.

parts and facilitates routing from one operation to another. . . . the monorail can approach the dip tanks and oven from any angle. The crossbars may be run up and down inclines passing from floor to floor or into and out of inclined entry ovens, and may be automatically raised and lowered singly or in groups on drop sections.

The drop sections permit the raising and lowering of the crossbars in a vertical plane. This allows the use of the smallest possible rectangular tank. The use of small tanks mounted on wheels permits the changing of colors without shut down. Also, because of the small volume of paint in the tanks, color uniformity and duplication can be obtained without large paint losses.

The heater—the heart of the system—is the well known Nichols-McCann-Harrison oil or gas-fired air heater. Heaters of this type have proved safe, reliable and economical. They are used throughout the automobile industry and are approved by the National Board of Fire Underwriters. The temperature in the oven is constantly maintained at any predetermined point by means of recorder controllers. The indirect air-heating eliminates radiant heat on the product, keeps the oven sweet and thereby insures uniformly baked product.

New Super Wood-Sealer

Super Wood-Sealer, a new product, has been announced by the Zeller Lacquer Mfg. Co., Inc., 20 E. 49th St., New York City. According to the manufacturer, the new Super Wood-Sealer overcomes all of the problems with which users of wood sealers have been bothered for many years.

The company claims that this lacquer product is foolproof in every branch of wood sealer application, and on all types of wood.

Concentrating their research, the Zeller chemists claim to have eliminated suction and shrinkage of the film to a degree which relegates this particular problem into a negligible factor in any branch of wood finishing, regardless of what kind of wood is being finished. Tests have established the properties of the new super-sealer as providing a substantial and reliable foundation under any circumstances.

Other characteristics and merits of the new super wood-sealer are that it: (1) bonds or joins in perfect union with lacquer, (2) has excellent building and covering qualities, (3) lays down the fiber or fuzz of wood surfaces instead of causing a "raised grain" condition or roughened surface, (4) causes no cloudiness of natural wood finishes.

The super-sealer is supplied ready for use in regular spray equipment, and can be diluted if necessary to meet the requirements of smaller equipment or for unusual production conditions.

Art Caning and Decorating Apparatus

John W. J. Akermans, 6520 Sterling St., Detroit, Mich., announces a small tool which he has invented and developed for finishers to use in "art caning, plastic relief striping and other exterior and interior decoration."

Quoting from the manufacturer's literature, the tool "weighs about 2-lbs. and consists of a tube in which is mounted a piston oper-

If Results Are What You Want

IT matters little how much — or how little your finish costs you — unless you get the desired results. Economy purchased at the price of finishing results — is a luxury none can afford — while top price does not necessarily mean maximum quality.

All we ask is that you try J-W-F finishing supplies — test them thoroughly in your own plant — check results with any finish now on the market — and then compare costs.

This test has been made in the finishing rooms of many plants — and in a great majority of the cases — the Jamestown Wood Finishing Company won the decision.

If fool proof — dependable finish is what you want — and if you are willing to pay what a good finish is worth — but no more — then J-W-F finishing supplies should have your serious consideration. May we have the opportunity to show you why?

■

Jamestown Wood Finishing Co. products are guaranteed. If they will not do for you what we claim for them your money will be refunded.

■

Jamestown Wood Finishing Company

Executive Offices and Plant

JAMESTOWN, NEW YORK

BRANCH OFFICES: Milwaukee, Wis. Meriden, Conn; New York City; Lenoir, N.C

STAINS - FILLERS - SHELLACS
VARNISHES - LACQUERS - ENAMELS

Finco

NON-GRAIN RAISING

Water Stain—

requires ***no sanding*** . . . . . ***no wash coat*** . . . . saves 24 hours in the finishing room. One furniture manufacturer saves $1.50 on every dining room suite.

Positively fast to light . . . . made only from water aniline colors. Inquiries solicited. We will be pleased to demonstrate this product or send samples for you to try . . . . Our service department is at your disposal.

Finishing Products Co.
3725 E. 13th St. Indianapolis, Ind.

BRASINGTON'S NO. 50 DRAWER LACQUER

It's Lacquer You Want for Your Drawers, Washcoating and Damp Proofing.

$1.10 Per Gallon

Brasington's No. 50 drawer lacquer is a high grade, heavy bodied lacquer. It is really more than a lacquer for finishing drawers. For cheaper lines it may be used as a complete finish. The trade has been looking for such a product for a long time. Comes in clear or in tints. Investigate this remarkable lacquer today.

Brasington Paint Mfg. Co.
Marietta, Ohio

ated under the pressure of a coil spring; it has a capacity of about three fluid ounces of paint or lacquer which permits the finisher

to stripe for about one hour before refilling."

The device is completely adjustable and is equipped with interchangeable guides to give it a wide range of usefulness. A 14-page booklet, giving instructions, information, designs of samples, etc., is furnished with the apparatus.

Conveyor Safety Stop

A positive conveyor control that automatically stops the conveyor in the event of chain breakage has just been announced by the Kurth & Knapp Mfg. Co., Detroit, Mich. This safety device—prevents accidents to workmen and damage to products—has been inspected and approved by the

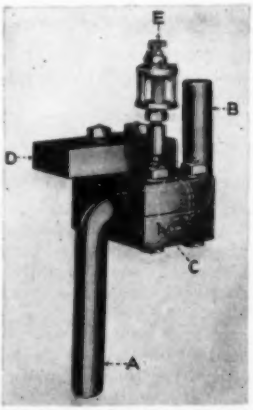


Fig. 1—Close-up of "stop" for conveyors.

Detroit Counsel of the National Safety Society.

According to the manufacturer's literature:

"The Kurth & Knapp safety stop works under all conditions on up or down grades and has proved 100% effective in numerous tests. It may be equipped with a limit switch, automatically shutting off power to the

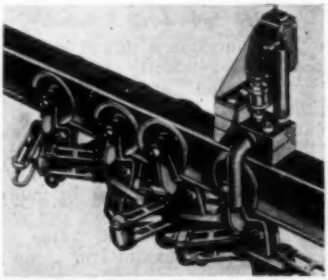


Fig. 2—The safety stop mounted on typical conveyor rail.

conveyor drive, thus stopping the whole system when the conveyor chain breaks or meets with any mishap."

Referring to Fig. 1, the automatic stop consists of a one-piece forged steel crank composed of a guard arm *A* and a lock arm *B* inserted in a bearing block *C*, which is bolted rigidly atop the monorail conveyor.

The guard arm *A* oscillates over trolley wheels as they pass at normal speed. When struck by a runaway trolley wheel, this guard arm is thrown violently upward against a stop block *D*, forcing down the lock arm *B* which catches and automatically stops the trolley wheel. An oil cup *E* on top of the device provides constant lubrication. When the guard arm *A* is thrown upward by the racing trolley wheels on a broken chain, it also engages the limit switch, shutting off the conveyor power.

Polishing Wheel Setup Machine

The Houdaille-Hershey Corp., announces a new polishing wheel setup machine, developed and used in the Detroit plants of the General Spring Bumper Corp., a division of the corporation. The device reproduces the motions and efforts made by an expert polishing wheel setup operator. It applies abrasive correctly, economically and uniformly on any size of wheel from 5-in. diameter by 1-in. face to 20-in. diameter by 6-in. face. Larger wheels can be covered, if desired.

"Careful and repeated time studies in the corporation's plants show direct savings by use of these machines of better than 66% of the man labor required by the old hand setup method, plus an increase of more than 20% in the production of a wheel mechanically set up, over the manually prepared wheel."

The company states that it is now in a position to offer these machines to the trade.

Paints and varnishes dry by oxidation, while nitrocellulose lacquers dry primarily by rapid increase in viscosity upon evaporation of the volatile solvents and diluents.

DuPont's New Outdoor Green

The Paint and Varnish Division of the DuPont Company has just brought out a new green paint known as the DuPont Trim and Trellis, a green outdoor paint that will not fade.

Industrial Finishing

Issued fifteenth of each month. Distributed exclusively to executives and foremen finishers in all kinds of industrial plants where finish coats are applied.

PRACTICAL PUBLICATIONS, Inc.
Publishers

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Advertising rates on application.

EDITORIAL

Fall Activity: Lessons to Learn

September is usually conceded to mark, in a general way, the end of the summer vacation period for both workers and students, and the beginning of fall activities. Speaking of students, probably the real underlying urge that induces or compels students to attend their respective schools is that they may become better informed and therefore be more valuable to themselves, their associates, their future employers or customers, and their country. The majority of those who are working or have worked will agree that the better informed one is, the more valuable he is—provided he uses his information and ability sensibly.

Men identified with any of the several industries which include finishing are impressed repeatedly by the tremendous value of up-to-date information relating to their own and allied work. The industrial finisher has numerous opportunities to learn, and it is to his interest to make the best of them—to make himself so valuable that his services will always be in demand somewhere, regardless of the relative state of national prosperity.

See Industrial Exhibits

In connection with and in many cases independently of the various county and state fairs held throughout the country every autumn, there are industrial exhibits and art exhibits well worth seeing. Finishers and all who are interested in any phase of industrial finishing operations can find much of interest and value by visiting these exhibits of articles that represent the best and the latest in such features as utility, convenience, safety, design, decoration, and art effects.

To look over exhibits of this character it is not only interesting and informative, but it stimulates the intellect; often some of the exhibits suggest new ideas and enable one to visualize added improvements, thereby opening up new opportunities for gainful activity.

Selling to Insure the Product's Success

Many times a finish manufacturing concern of national reputation, with products of unquestioned quality, loses to a smaller competitor because the larger concern is not properly represented either by the salesman, demonstrator or some other key man along the line. In some cases it is due to the salesman's

hesitancy about asking assistance and cooperation from the engineers and chemists in his own company's organization. Possibly he prefers to deal with prospects and capture orders single handed, or perhaps previous experience has shown a lack of willingness to assist and cooperate on the part of those responsible for delegating such services.

Any evidence of timidity or carelessness in facing the real problems of a customer and working with him as an attorney works with his client or a doctor with his patient, leaves the finish manufacturer little hold on his customer. In fact the customer so treated becomes any firm's customer.

A carefully designed product or an intricately formulated material that has had a great amount of scientific and practical skill exerted upon it to make it a superior piece of goods, is well worth modern merchandising and service to insure its sale and use only for what it is adapted to, and under such conditions as will permit it to perform successfully. Really, a worthy slogan would be to "sell or recommend the use of a product only where its success will be an immediate and lasting advertisement of its merits and its manufacturer's reliability."

Advertise Performance Facts

Recently, the painter for a firm of heating and plumbing contractors was telling me of a difficult job he encountered—the painting of a large pipe line, part of which was submerged under water while in operation. This pipe line had an extra heavy coating of black asphaltum, but someone in authority insisted that it be painted a lustrous bright red.

CEM

TRADE MARK REG. U.S. PAT. OFF.

A Short

Short

Story

More XCEM industrial cleaners have been sold and used this year by all types of industries than during any similar period in the history of our company.

The users of XCEM products know that their cleaning jobs are being done quicker, better and at less cost.

There is a specialized XCEM cleaner for every industrial purpose.

May we demonstrate to you why the use of XCEM industrial cleaners is growing constantly?

Magnuson Products Corp.

Specialized cleaners for every Industrial Purpose

Hoyt and 3rd St. Brooklyn, N. Y.

WAREHOUSES

CHICAGO BALTIMORE DETROIT
TOLEDO INDIANAPOLIS
ATLANTA MONTREAL LOUISVILLE

Representatives in all Principal Cities

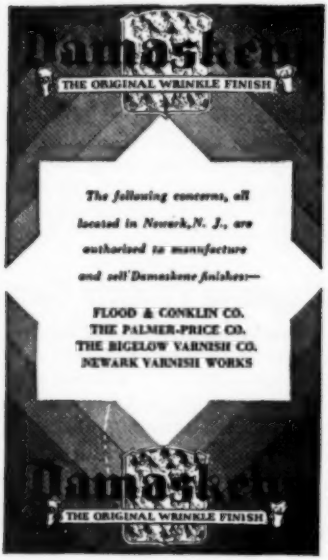
New type—ultra modern "Air Exit" Ventilating and Drying Fan . . . 2 to 6 blades

Aeroplane Propel[illegible]ler fan blades are universally recognized as the most efficient and economical . . . and the blade which our engineers have designed and developed (constructed of Nickel Alloy Aluminum) is practically perfect in these respects.

Note exclusive motor bracket—gives better frame support and can be adjused to fit any motor.

Write for price and descriptive circular . . you'll be surprised.

AIR-MORE PRODUCTS CORP.
3402 Northwestern Ave. Indianapolis, Ind.


Damaskeen
THE ORIGINAL WRINKLE FINISH
The following concerns, all located in Newark, N. J., are authorized to manufacture and sell Damaskene finishes—
FLOOD & CONKLIN CO.
THE PALMER-PRICE CO.
THE BIGELOW VARNISH CO.
NEWARK VARNISH WORKS
Damaskeen
THE ORIGINAL WRINKLE FINISH

Naturally, to apply red enamel right over the asphaltum would result in the asphaltum bleeding through or "burning through," as this painter called the staining action. The problem was to use some kind of an effective sealer over the black asphaltum in order to have a safe surface on which to apply the enamel. Another difficulty entering into consideration was the presence of moisture and the lack of time to permit the use of anything by moderately quick-drying materials.

By doing some experimenting, the painter hit upon just the right materials to suit all requirements of the job. It occurred to me, as he was relating this incident, that here was splendid material for a performance copy advertisement for the manufacturer of the paint materials used. Often it is more interesting and valuable to the user of finishing materials to know what materials can be used for certain jobs, and how well they perform under adverse conditions, than it is to be told repeatedly that certain firms have certain materials for sale.

Really, if an ordinary material can be used to solve a difficult or apparently difficult problem, that fact renews interest and adds value to the material. The firm that sells the material then has an excellent opportunity to point to the quality of its product as being responsible for such excellent performance—even though competitors sell practically the same material at virtually the same price.

Bulletin of Striping Tools

The Paasche Airbrush Co., 1921 Diversey Parkway, Chicago, Ill., is distributing a bulletin describing and illustrating its present line of striping tools, and is prepared to send any specific or additional information desired, on request.

Color Mixtures for Various Tints, Shades and Hues

(Continued from page 60)

Haviland Blue

White	37
Prussian blue	1
Raw sienna	1

Hay Color

White	100
Raw sienna	3
Lamp black	¼

Hazelnut Brown

White	20
Burnt umber	5
Medium chrome yellow	1

Hazy Blue

White	60
Ultramarine blue	16
Burnt sienna	1

Heather

White	51
Cobalt blue	2
American vermilion	1

Helen Pink

White	116
Medium chrome yellow	1
Scarlet vermilion	8

Heliotrope

White	21
Cobalt blue	2
American vermilion	1

Henna

White	5
Burnt sienna	2
Indian red	1

Hepatica

White	53
Mauve	2
American vermilion	1

Holly Green

Medium chrome green	5
Lamp black	1

Holly Red

Alizarin red	4
American vermilion	4

Honey

White	100
Raw sienna	3

Honey Dew

White	81
Deep chrome yellow	1
Medium chrome yellow	1

Hydrangea

White	160
Prussian blue	1

—J. K. Cooper.

SAFETY

in the Finishing Shop . . . . . .

against fumes, dust, fire and other hazards is assured when you adopt PULMOSAN safety devices.

Write us for full information on any of the following items.

▼

Respirators
Sand Blast Helmets
Non-Sparking Tools
Fire Extinguishers
First-Aid Cabinets
Safety Goggles

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Simply indicate items interested in, and clip coupon to letterhead.

PULMOSAN
SAFETY EQUIPMENT CORP.
174 Johnson St. Brooklyn, N. Y.
Kindly send details of Safety Equipment recommended for Finishing Shops.

NAME .....
FIRM .....
ADDRESS .....

STENCILS for SCREEN PROCESS

FOR oil paint reproduction of artistic commercial and decorative effects on any smooth surface or substance.

Screens made from your designs or we will furnish art and screens complete.

Tell us your needs so we can be helpful in our first reply.

ART-WAY, Inc.
603 E. Washington Indianapolis

Hy-Speed
EXPLOSION-PROOF
ELECTRIC MIXERS
Clamp to *any* tank
and mix *all* liquids

MIX QUICKER
LAST LONGER
COST LESS

Note Patented "Push Pull" Propeller Action.

ALSOP
ENGINEERING CO.
39 West 60th St. New York

Clean Spray Equipment

If there is one place in the plant where cleanliness pays large dividends in the saving of time and material, it is in the finishing room—especially around the spray booth and its accessories. Enough has been written about the fire hazard caused by accumulations of oily rags, wiping material and lacquer dust that it is the exception rather than the rule to find such conditions in plants today. But the same state of cleanliness does not always prevail in connection with spray guns, hose and fluid containers.

Let me tell you a true story of cleanliness by quoting the finishing foreman of a large electric refrigerator plant:

"Each of our spray operators is held responsible for his spray guns. We allow all operators 20 minutes each day just before quitting time to take their guns apart and wash them thoroughly in the solvent of the material being sprayed. When clean, the parts are wiped dry, a small drop of oil is put on each moving part —except in the case of guns for spraying vitreous enamel—and the guns are reassembled ready for use the next morning.

"All unused material left in a metal container is poured back in the drum in the mixing room, and the container is rinsed out with the solvent. This prevents slight discoloration of the delicate shades of lacquer due to exposure to heat throughout the night, and the formation of skins on the lacquer or other finishing material having a gum base.

"All rubber hose lines connecting containers and spray guns are disconnected, washed out with the solvent and then reassembled. By this method all equipment is

ready for immediate use the first thing in the morning, and it is in a condition to remain in continual service throughout the day. The cleaning solvents we use are naphtha and turpentine when varnish and enamel have been sprayed; lacquer reducer is used for lacquer guns, alcohol for shellac, and water for vitreous enamel.

"Our equipment lasts longer, works better and produces more satisfactory results because it is clean, and we know that it is clean. Every employe worth his salt takes a certain amount of pride in his work and the tools with which he performs that work. I know of no better way for management to cooperate in promoting that pride than to provide the best in modern equipment and to allow employes to spend the time necessary to keep those tools clean."

That is the story. And in conclusion, I want to leave this thought with you: often small oversights and neglected details cause intricate finishing problems.—P.C.B.

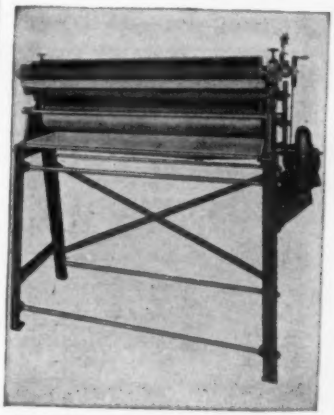
Every minute someone pays $1,066 for fire loss. Is fire prevention really practiced in your plant?

SALESMAN WANTED

To sell wood finishing and industrial paints, stains, fillers, lacquers, varnishes and enamels to industrial trade in Eastern territory. Must have selling experience, technical knowledge and be able to demonstrate and advise practically in finishing rooms. Unusual opportunity for right man. Full particulars as to experience, references, etc., must be given with application. Address THE GILBERT SPRUANCE CO., Richmond and Tioga Sts., Philadelphia.

The NAZ-DAR Coating Machine

For Applying Lacquers, Enamels, Varnishes, etc.



Faster Production
Less Material Waste
More Uniform Application
Greater Coverage Per Gallon

A NAZ-DAR coating machine will show improved results over hand or automatic sprays on any sheet or strip material.

NAZ-DAR COMPANY
4014-22 N. Rockwell St.
CHICAGO, U. S. A.

Also Manufacturers of Silk Screen Process Paste Paints, Equipment and Supplies

Get Facts On HOBART Before You Buy

HIGHER QUALITY PAINT SPRAY WORK -- MORE SPEED -- LOWER COSTS

Don't buy Paint Spraying Equipment until you have investigated Hobart. No one ever bought other equipment if they compared the dollar value and saw the machine in operation. You, too, will want to look over this complete line. Its outstanding value is made possible by Hobart manufacturing it complete - - not simply assembling. A size for every job.

30 DAYS TRIAL TO PROVE SUPERIOR RESULTS TERMS AS LOW AS $16 MONTHLY

Check the items that interest you and mail with your letter-head.

- ☐ Electric Paint Spray
- ☐ Gas Engine Paint Spray
- ☐ Use for Production
- ☐ Portable Outfit
- ☐ Stationary Outfit
- ☐ Use for Maintenance

Hobart Brothers Co. Box F-90 Troy, Ohio

Classified Advertising

Advertisements under this heading 45 cents a line per insertion, minimum charge, $1.35. In estimating, calculate six words to one line, and add one additional line for heading. Use this department to obtain help, find positions, buy and sell equipment, dispose of manufacturing properties, etc.

POSITION WANTED

As industrial salesman or tester of industrial materials. Have sold in the East, also had finishing experience. Will travel anywhere. Address IF-349, care Industrial Finishing.

FINISHER FOREMAN POSITION

Desired in A-1 plant, preferably Eastern location. Fully capable of handling finishing department. References furnished. Address IF-348, care Industrial Finishing.

SALESMAN OR FOREMAN

Desires to make connection with firm, demonstrating and selling lacquers, varnishes and enamels, to the industrial trade. Eleven years' experience in metal and wood finishing. 31 years old; one college year. Now employed as finishing foreman, with present firm past three years, in manufacture of dental and hospital equipment. Consider foreman position in Chicago district. Address IF-351, care Industrial Finishing.

EASTERN MANUFACTURER

Is desirous of employing chemist or practical man familiar with formulation and manufacture of undercoatings, both oil and lacquer, and new synthetic gum products. Please write fully of your experience and indicate your salary expectations. Address IF-347, care Industrial Finishing.

JOBBERS WANTED

To handle complete line of lacquers, lacquer enamels, thinners, solvents and nitrocellulose products for established Eastern manufacturer in the following territories: Chicago, Pittsburgh, Cleveland, Cincinnati, up-state New York, Baltimore and Atlanta. Write for particulars. Address IF-350, care Industrial Finishing.

EXPERIENCED SPRAY GUN MAN

Wanted in each state. New System of Signs with a spray gun. Must invest $1,000. Closed state territory and stock interest in NU-WAY SIGN CO., 648 Broadway, Denver, Colo.

FIRST-CLASS FINISHER FOREMAN

Desires position. 15 years' experience. Uptodate in the latest finishes and can give best results on medium or high grade work. Address IF-352, care Industrial Finishing.

FANS—EXHAUST AND VENTILATING

For spray booth and paint room ventilation. Fans furnished in extended shaft, belt and direct connected motor drives, also single, double and multi-blades. Efficient—trouble free. All aluminum, polished blades; ball and roller bearings. Improve your working conditions and secure the lowest insurance rates by correct ventilation. CENTRAL FAN MFG. CO., 1457 Chouteau Ave., St. Louis, Mo.

FLINT FLAT FINISH

FLINT FLAT FINISH is more durable because we have built extra toughness and elasticity into its heavy body to meet exceptional conditions.

FLINT FLAT FINISH gives true uniformity of sheen because we have created in it a new smoothness to produce soft, deep rubbed tones of unusual depth.

FLINT FLAT FINISH saves time and labor because it dries more quickly and because it requires no rubbing.

We have been able to develop this unusual varnish because we have long specialized in meeting unusual problems for the factory that must have perfect materials.

MAYER & LOEWENSTEIN

INDUSTRIAL LACQUERS . . . ENAMELS
VARNISHES . . . . FIRST COATERS

43-43 Vernon Blvd., Long Island City

ESTABLISHED 1846

HILO

The Symbol of Service in Finishes and Their Use

Look into the Paint Departments of any of the thousands of plants where Hilo Lacquer or Enamels are used.

You'll find smooth steady production, economical costs and perfect finishing results that will win your admiration.

And note the efficiency and dispatch with which the men work — efficiency that comes with their confidence in the dependable performance of Hilo Lacquer and Enamels.

Why not establish these admirable conditions in your finishing department? Whether you wish to smooth out production snarls, minimize costs or give your product a colorful finish with greater "sales" appeal—

Consult

HILO

VARNISH CORPORATION

1 GERRY STREET BROOKLYN, N. Y.

BOSTON CHICAGO
PHILADELPHIA PITTSBURGH DETROIT

Air Drying { Clear and Transparent Color Varnishes / Enamels — All Colors, White and Black } *Baking*

Lacquer-Clear All Colors, White and Black, Japans-Black and Rubber Finishes